THE AMERICAN

BEE JOURNAL

Devoted Exclusively to Bee Culture.

VOL. XIV. CHICAGO, ILLINOIS, MARCH, 1878. No. 3.

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Editor's Table.

☞ Friend Argo (just as we are ready for the press) wants us to insert a letter—but as we cannot find room, at this late date, we will give the gist of it. He has received a host of letters, and neither he, his wife or neighbors could read the signatures to many of the letters. Let every one write names, post office and state plainly.—It will save very great annoyance to those receiving the letters.

☞ We regret to learn that friend R. R. Murphy, of Garden Plain, Ill., lost his beloved wife on Jan. 30, after a long and painful illness. The AMERICAN BEE JOURNAL extends its condolence to the bereaved brother.

☞ To save confusion and disappointment let all who intend to buy hives, honey-boxes, crates, &c., order early. Manufacturers complain of the rush just before swarming season. A little foresight in this will save disappointment and ill-feeling.

☞ Four government vessels are to be dispatched to France with full loads of American "truck" for the Paris exposition. All the space allowed to the United States has been already assigned by the chief commissioner, but the applications are still numerous. American apiculture will be meagerly represented.

☞ A swarm of bees were recently discovered under the eaves of the Congregational Church in Boscawen, N.H., and with 69 lbs. of honey taken from their hiding-place a festival was held which brought the church a large sum.

☞ Friend Palmer has sent one of his double Langstroth hives to our Museum.—Such were recommended by Mr. L. in 1867. Friend Palmer uses them and speaks much to their praise. They are nearly the same as the single, with two entrances and porticos, and more box room. We have known friend Palmer for many years, and as he advertises a new Raspberry in this issue, would say that he is entirely responsible and honorable in his dealings.

☞ Cincinnati has a Poultry and Pet Stock Association. It was organized on February the 14, with the following object: To encourage and promote improvement in the Breeding and Management of Poultry, Pigeons, Bees, Game, and Pet Animals, by means of exhibitions and the collecting and disseminating of reliable and practical information relating thereto. Armin Tenner, is its Secretary.

☞ In *Gleanings* for Feb, Novice states that Wm. Hoge received an order from England (with $100) for comb foundation, and neither filled the order nor refunded the money. In reply to an inquiry, Mr. H. says he received but *one* order from Europe for foundation, and that was duly filled—but the amount was only $5.00. So there is a misunderstanding some where. Novice should either *prove* the charge made so publicly or take it back.

Mr. Hoge took hold of comb foundation when the Weiss machine was idle, and laid by as a useless thing. He worked hard to introduce it, and spent time and money in the endeavor—never receiving enough to reimburse him. Now, others are reaping where he has sown. The panic was too much for him, as it was for thousands of others. He is now working on a salary and devotes a regular sum from it to pay up old scores. When in New York, last fall, he informed us that he would soon be square with the world again. This is as honest and praise-worthy as the statements of Novice are unjust and ungenerous.—Those who are endeavoring to do right in these trying times should receive encouragement—not kicks.

John Long is Mr. Hoge's father-in-law.—He fully approved of the latter doing business in his name, as "agent;" which was printed on their stationary at the time. On our desk is a private letter from Mr. Long, which proves what we state. Two years since, we mentioned Mr. Hoge as "*alias* John Long," supposing it to be correct.—Finding it an error, we cheerfully make the correction, without solicitation on the part of Mr. H. or his friends. Novice will also, of course, make the *amende honorable*.—He evidently took a curent report as a fact, without proof, as we did.

☞ On page 33 of the February No., we said:

"Those who *use* an infringment of a patented article, are liable to the law, as well as the manufacturer and the vendor of such articles. All should therefore be careful, and not "burn their fingers" by purchasing or using an infringment. Better to throw them into the fire than get into trouble about such a small matter."

Some have interpreted this to mean, that we advised all having Novice's Smokers to burn them up. By reading the paragraph again, we think *all* can see our meaning—that it would be better to burn the article than "burn your fingers" in a law-suit.

ADULTERATION OF HONEY.—A California paper has the following item:

Assemblyman Waters of San Bernardino, Cal., has introduced a bill into the Legislature, amending the Penal Code by adding a new section concerning the sale of spurious honey. Every person who either sells, exposes or offers for sale, any artificial or spurious honey, as and for genuine or pure honey, is guilty of a misdemeanor.

Such a law should be in force in every State in the Union. Adulterators have no rights that honest men should be asked to respect. Set the ball in motion in every State and Territory.

☞ Friend Muth has sent us one of his Shipping Crates for comb honey. It is 14½ x16½ inches, and 12 inches deep, outside, and is substantial, neat and cheap. It holds 4 cases, each containing 8 small frames, 5½x6 inches, outside. Friend M. says they can be furnished for $18 per 100, ready to nail. The cases are intended to be placed on the top of the frames—two of them just filling the width of a Langstroth hive, but they are 4 inches short, the other way,—though they could be made long enough to fill, if the length, 19⅛ inches, would not be objectionable. We must say that we prefer the Prize Crate, which holds a dozen boxes or frames, as desired, and is of convenient size every way. We have pleasure in adding it to our Museum.

☞ We have received a model of a new "hiver," from F. R. Davis, Noble Co., Ind.—one that he has just invented. He says that he intends to give it a good trial this season, and report its practical value. We have added it to our Museum.

☞ The *Bee Keepers' Magazine* for Feb. appeared with a newly-engraved cover, and *Gleanings in Bee Culture* also came to hand with many illustrations and 8 extra pages. We are glad to note these evidences of prosperity.

CATNIP SEED should be sown very thick, in March, on good garden soil. Plants blossom the first season, but it requires two years to give them full bloom. In the fall, cover the plants slightly with rubbish, to prevent the frost from throwing them out of the ground. In the spring, set the plants out 3½ ft. apart each way, and cultivate like corn. Two years ago, in many localities, all sources of honey failed but Catnip. Those who wish to sow this honey-producing seed should procure and sow it at once. We can supply a few pounds at $2 per lb.

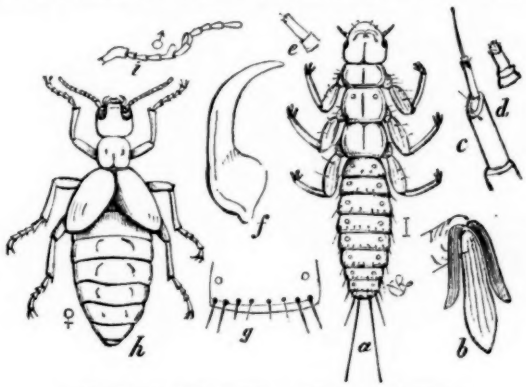
Curious History of the Oil-Beetle.

In a most interesting paper on the larval habits of the Blister beetles, in the Transactions of the St. Louis Academy of Science, Prof. C. V. Riley thus speaks of the bee-parasitism of the Oil-Beetle:

It is generally stated by writers on the Hive-bee that the Oil-Beetle (*Meloe*) is one of its parasites. The possibility that our more common blister-beetles were similarly parasitic on bees, taken in connection with the frequent complaints from apiarists of the wholesale death of bees, from causes little understood, led me, some years since, to pay attention to the biological characteristics of the blister-beetles, in the hope of ascertaining whether or not they really bear any connection with bee mortality. From these investigations I am satisfied that *Meloe* is only parasitic on the perfect Hive-bee as it is on so many other winged insects that frequent flowers; and that it cannot well, in the nature of the case, breed in the cells of any social bee, whose young are fed by nurses in open cells.

The history of *Meloe* may be briefly summed up as follows: The newly hatched, or first larva, (now generally called *triungulin*), was first mentioned in 1700 by the Holland entomologist Gœdart, who hatched it from the egg. Frisch and Reaumur both mistook it for a louse, peculiar to bees and flies. De Geer, who also obtained it from the egg, mentions it in 1775 as a parasite of Hymenoptera. Linnæus called what is evidently the same thing, *Pediculus apis*; Kirby, in 1802, described it as *Pediculus melittæ*, and Dufour, in 1828 named it *Triungulinus andrenetarum*. Newport, in 1845, (*Trans. Linn. Soc.*, vol. xx, p. 297), first rightly concluded that it was carried into the nests of bees, and described, in addition, the full-grown larva from exuvial characters, and the coarctate larva and pupa, which he found in the cells of *Anthophora retusa*. He failed, however, to fill the gap between the first and full-grown larva; and this Fabre first inferentially did in 1858, (*Ann. d. Sc. Nat. Zool.* t. ix. p. 205), by tracing the analogous stages of *Sitaris*.

The female *Meloe* is very prolific.—She lays at three or four different intervals, in loose, irregular masses in the ground, and may produce from three to four thousand eggs. These are soft, whitish, cylindrical, and rounded



MELOE:—*a*, first larva; *b*, claws; *c*, antenna; *d*, maxillary palpus; *e*, labial palpus; *f*, mandible; *g*, an abdominal joint; *h*, imago; *i*, antenna.

at each end. They give birth to the triungulins, which, a few days after hatching—the number depending on the temperature—run actively about, and climb on to Composite, Ranunculaceous and other flowers, from which they attach themselves to bees and flies that visit the flowers. Fastening alike to many hairy Diptera and to Hymenoptera, which can be of little or no service to them, many are doomed to perish, and only the few fortunate ones are carried to the proper cells of some *Anthophora*. Once in the cell, the triungulin falls upon the bee egg, which it soon exhausts. A molt then takes place and the second larva is produced. Clumsy, and with locomotive power reduced to a minimum, this second larva devours the thickened honey stored up for the bee larva. It then changes to the pseudo-pupa, with the skin of the second larva only partially shed; then to a third larva within the partially rent pseudo-pupal skin, and

finally to the true pupa and imago.—These different changes of form are known by the name of hypermetamorphoses, the term first given them by Fabre, to distinguish them from the normal changes from larva to pupa and imago, experienced by insects generally. The triungulin or first larva (*a* in cut) is characterized by a prominent labrum, very stout thighs, unarmed shanks, three broad and subspatulate tarsal claws, feeble and reduced trophi, untoothed jaws, 3-jointed antennæ, ending in a long seta, and four anal setæ, the two inner ones longest.—When the abdomen is shrunken, the general aspect is very much that of *Pediculus*, and it is hardly surprising that some of the early describers so determined it.

The Crystal Honey Fraud.

Friend J. E. Moore, of New York, has sent us a hand-bill puffing this vile trash. It is the same that has been "exposed" many times, under different names. This time, one Chidester, hailing from Fulton St., N. Y., is trying to do a *wholesale* business in the sale of Family, County and State Rights for the Recipe to make it.

The circular states that Honey is a staple and in great demand. With this Recipe, which can be filled by any druggist, it can be sold at a low price, and yet the agent can make more money than at any honorable business. 100 ℔s of Honey(?) can be made in half an hour, at a cost of 10c. per ℔, and can be sold for 25 cents per ℔.!!! How *cheap* that is, when the genuine article can be bought for less money.

The circular proceeds to work out *on paper*, the profits, and concludes with $1500.00 as profit to the agent on 10,000 pounds.

Then the recipes can be sold at $1.00 each, to a million families, who will thus be gulled out of $1,000,000 for nothing but a receipt to make a vile compound—*called* Crystal Honey. The agent can get 500 of these recipes for $25 and have a $30 watch thrown in!!

Exclusive rights for large cities (where those reside who know but little about the production of genuine honey), are sold at *special* rates! Of course! Why not?

To cap the climax of *fraud*, these scamps print a "testimonial from M. C. Quimby," which is intended to convey the idea that the late "M. Quinby," of New York, approved of this swindle. The whole is an outrage on honesty, and a libel on common intelligence!

Chidester also deals in bogus Jewelry, Magic goods, Floral Decorations, a beautifully engraved dollar plate of "The Lord's Prayer," which he sells to agents for $15.00 per 100, and Palestine Crosses from Lebanon and the Mount of Olives, and any amount of *cant*. A good wind up for such a huge fraud!

It is a *trite* remark, but very full of truth, that "when you see a great deal of virtue displayed in the store window, you may depend upon it that the Stock within is exceedingly meagre." Truly, Chidester's case is no exception to the general rule.

☞ We are hard at work on Prof. Cook's new book on the Apiary, and can assure our readers that it is exceedingly interesting. It contains facts and principles not to be found in any other work yet published, and these are just the things, too, to make apiarists more successful. It is profusely illustrated with cuts, engraved expressly for this work; and, when completed, it will be the most valuable work ever placed within the reach of those who wish to conduct the apiary on scientific principles, and as a reward for their labors expect a good yield of marketable honey.

Honey Jar Labels.—To make a good paste, follow this receipt: Dextrine, 2 ounces; acetic acid, 4 drachms; alcohol, 4 drachms; water, 2½ ounces.—Mix the dextrine, acetic acid and water, stirring until thoroughly mixed; then add alcohol. For attaching labels to tin, first rub the surface with a mixture of muratic acid and alcohol; then apply the label with a very thin coating of the paste, and it will adhere almost as well as on glass.

Letter from Bohemia, Austria.

Herr R. Mayerhœffer, editor of the *Bienenvater*, in Prague, Austria, in a recent letter remarks as follows:

"It gave me great pleasure to read the Proceedings of the National Convention of Bee-keepers, held in New York, last fall, as reported in THE AMERICAN BEE JOURNAL. I shall translate many of the speeches for the *Bienenvater*. I follow with great interest the progress of American apiculture, and endeavor to make its details advantageous to our German bee-keepers, and I am sure that they fully appreciate my endeavors.

"In 1879, the Congress of German and Austrian Bee-keepers will be held at Prague. At this early day, I invite you in the kindest and most cordial manner not to fail to make us a visit at that time, and take part in our deliberations."

Brother Mayerhœffer will please accept our thanks for the cordial invitation. If it comes within the range of possibilities, we shall be most happy to avail ourselves of the pleasure of such a treat, but fear it will not be possible to leave our duties so long.—Perhaps the National Convention, when it meets this fall, may conclude to send a delegate to the German and Austrian Congress; if so, the same will be stated in its Report.

Honey Prospect in California.

Our readers will be interested in the following letter from friend J. S. Harbison, in relation to the prospects for a honey crop there this year:

We have 6.02 in. rain for this season, to date. In the bee range the quantity is, perhaps, 1 inch greater in some localities, a little less in others. It has fallen in gentle showers and all counts for good. Should we have a further addition of, say, 4 or 5 inches, we can safely count on a good, average bee season. I think, however, in no event can there be as large an aggregate crop of honey as was produced in 1876.

Two reasons may be given for this conclusion. 1st. Bees are mostly weak in numbers; not, in my opinion, being as numerous, collectively, as in the spring of 1876. 2nd. Some of the "*semi-shrubs*," heretofore relied on for honey, are seriously injured, or *totally killed* by the drought, and can only be restored from seed,—requiring from 1 to 2 years' growth before affording bloom. In short, it will require one good season to fetch the vegetation to a normal condition.

The season is late; bees are only now commencing brood, and as I have left them, as far as possible, in quiet, thus far, I cannot give any correct idea as to the number living, or the condition they are in.

We will commence active work as soon as the weather clears and gets warm. J. S. HARBISON.

San Diego, Cal., Jan. 19, 1878.

Friend F. C. Hazen, Anaheim, Cal., under date of Jan. 10, 1878, writes:

"So far, it has been dry here, and bids fair to be a *dry year*; if so, but very little honey will be produced this season. About one-third of all the bees here died last year, and if we get rain, we shall only harvest one-third of a crop."

On February 15, a severe storm and heavy rains were reported from San Francisco, doing an immense amount of damage. So, between a severe drouth last year and too much water this year, the outlook in California is anything but encouraging.

THE ROBERTS HIVE.—We have just added to our Museum a hive, manufactured by John Roberts, Henry, Ill. It is a modification of the Langstroth, with division boards, portable portico, slanting alighting board, loose bottom board and several other items of change. It is well made, and nicely painted; and its construction shows that friend Roberts is thoroughly familiar with the habits of the bee, having kept bees for 20 years. He has had experience with the Langstroth, Quinby, American and Cottage hives, but considers this an improvement on them all. He uses it to winter on summer stands, shielding only from the north and west winds, contracting by division boards to a few frames, and packing chaff or straw, as well as having a chaff-box on top so filled.—For out-door wintering, it is doubtless a good hive.

The Smoker Question.

DEAR EDITOR.—On page 31, Feb. No., you state that the Bingham Smoker is not a copy of the Quinby, but is "original in construction and design," especially in "its internal arrangements." Is not the "direct draft" the only thing *original* in it? Is it not a copy of the Quinby in everything else? Please answer in the next issue. QUIZ.

Quiz is quite inquisitive. We dislike invidious comparisons, and shall not make such in this answer—aiming only to give the simple facts.

As the Bingham Smoker is in every part designed for, as well as adapted to the "direct draft" principle, it cannot be a copy of one whose construction is not adapted to that end. Among the dissimilarities we note the following:

The Quinby has a small, long tube, with a loose wire grate; the Bingham has one, *short* and *wide*, with a perforated *iron* fire-grate.

The former has a spiral spring; the latter two long *flat* springs.

The former has two loose, metal valves; the latter one tight, *spring* valve.

The former has a long, thick bellows, with a diaphragm; the latter a thin, square bellows, with *no* diaphragm.

The former has arms of tin to hold the tube to the bellows; the latter is held by a *block* of oak.

The former has a sharp, thin joint, strained with every motion; the latter a *long, wide* joint, and remains almost motionless.

The question now is, *Where is the similarity?* Our statement in the February issue was that "the upright bellows and tube in form bore some resemblance," but in no other respect are they similar. Can Quiz find any other resemblance?

☞ Chas. Hastings, of Carlville, Pa., says he has a new plan for holding foundation. He says, "I call it the convex wedge slot; thus V 1⅛ inch at surface, and ⅛ inch deep. This form holds it so much better than a saw kerf. A little resin put into the dipping wax will be beneficial. No patent."

☞ J. Oatman & Co's new Price List is on our table, quoting figures for this season's operations. They are good men to deal with, so far as we have ever heard, and have a large advertisement in this issue.

☞ In J. E. Cady's letter, on page 57, Feb. No., read "I got 700 lbs. of honey and sold it for $138.

☞ Sixteen extra pages in this month's JOURNAL, and yet, for want of room, many interesting Letters and Communications, prepared for this issue, are crowded out!!—The proceedings of the North-Eastern Convention did not come to hand till the 23d, and then, in order to give it room, two whole departments—Marketing, and Notes and Queries—had to be omitted!

We are in the midst of a great *Revival;* thousands of bee-keepers, many of them hitherto belonging to the class styled slovenly, being convinced of the folly of that course, have made up their minds hereafter to work scientifically. "Old things are passing away," and out of the chaos is emerging "the new order of things"—the *new heaven* of intelligence, and the *new earth* of practical and scientific work!

The breezes of this consternation have already reached the consumers, who are turning their attention to the value of honey, as a medicine. Anciently its healing powers were acknowledged everywhere—but of late, people have, in its stead, been swallowing death-dealing drugs by wholesale. This *Revival* promises to reinstate Honey in its proper place, as Nature's remedy, pure and simple, for diseases of the chest, lungs and stomach, as well as for healing wounds, bruises, etc.

As the JOURNAL presents the old, as well as the new converts, an opportunity of "telling their experiences," it must enlarge its borders, as occasion may require, even if it takes sixteen extra pages, each month, to accommodate them.

The April number promises a *rich feast* in every department. Our readers having greatly increased since the new year, our energy and courage is correspondingly increased, and we, renewedly, devote our attention alike to producer and consumer—believing that their interests are identical.

☞ Henry Alley, of Mass., and N. Cameron, of Mo., say that they have, for years, sent queens by mail, with a written letter, paying letter postage on the package.—When letter postage is paid on a package, the contents being unknown to the Post Master, he is under obligation to forward it—and so they say they have had no trouble about sending queens by mail. This evades the *letter* of the law, but without further light on the Postal law, we could not recommend its general adoption. We shall investigate the new law about to be passed, as soon as we get a copy of it, and report in the next JOURNAL.

Southern Notes,

GLEANED BY

W. J. ANDREWS, - COLUMBIA, TENN.

Sketches from Tennessee.

POLLEN STIMULATES.

We want strong stocks of bees early, to secure good yields of honey; and to secure such stocks, it is necessary to begin operations in the apiary early.—It appears to be the generally received opinion, that bees rear their brood in proportion to the amount of honey they are gathering, and many bee-keepers, who wish to stimulate their queens to early action, even with plenty of honey in the hives, resort to feeding on liquid sweets. Is there not a misconception as to the wants of the bees in such feeding, and is it not pollen, or some substitute for it, that is required to reach the end desired? We frequently find, during a great flow of honey, when the gathering of pollen is almost wholly suspended, comparatively, a small amount of eggs and brood, but so soon as the flow of honey begins to subside, and the bees are again gathering pollen freely, the queen is stimulated to great activity; filling, in many instances, all the unoccupied space in both apartments to the hive with brood, and with a normal colony, will be kept so until these conditions are frustrated. The reason is obvious. The queen oviposites but sparingly, except when the hive is supplied with plenty of pollen. It follows, as a consequence, that the bees supply her, as well as the young bees, with food, principally prepared from pollen. This accounts for the eagerness with which bees gather pollen at the approach of warm weather, and if natural pollen cannot be obtained, for the avidity with which they take any substitute accessible to them.

REPORT.

We began the season of 1877 with 36 colonies, mostly weakly ones, and increased, by artificial swarming, to 92. The linden harvest being a failure, our honey crop was light; though from a single colony we obtained 232 ℔s. of honey.

Our greatest increase from a single colony was 8, which are now all in a fair condition. Have lost 2, up to this time, for want of attention at the proper time. After disposing of some and uniting others, we have 79, with prospects of safely carrying them through. S. D. MCLEAN.

[Right glad, friend McLean, to welcome you to our "Southern" department. Here's our ☞ and may we have the pleasure of frequently griping it. Our old friend Moon has fallen in line, and gives us an occasional item; now, you have stepped in. Will not some more of the old *World* family give a greeting? Why not have a reunion of that old family in these columns?—Come, Dixie friends, let's hear from you!—W. J. A.]

Muth's Shipping Crate.

FRIEND ANDREWS:—Your favor of December 20, 1877 came to hand in due time. Also your comb-guide. It seems to be, of late, the general disposition of our friends, to improve on the style of their comb honey; and it is very essential, also, that comb honey should arrive at its destination in as good style as it is shipped from home. Our friends use, generally, too large boxes; boxes which are calculated for two men to handle, but which are often handled by one man only, who works the boxes along on their corners and breaks most of the combs. Much to the dissatisfaction of the dealer and producer. Several very good shipping boxes were exhibited at the Convention in New York. Still there is room for improvement. The frames, or sections should be no smaller than to hold 1½ to 2 ℔s. of honey; because, we can sell, just as readily, 2 ℔s. of honey in a frame as 1 ℔; and we can produce more honey in larger frames, because the finishing part occupies the bees, apparently, the longest time. The shipping cases should be neat, substantial and cheap. They should hold no more than about 50 or 60 ℔s. of honey, and a handle should be on each side, towards the upper half of the case, which prevents those baggage-smashers from setting the cases down on a corner.—The honey should also be seen behind the glasses of the section boxes, and at a safe distance from the outside.

I have sent you one of my shipping cases, with 4 sectional boxes, as a sample. Imagine, if you please, those empty sections to be filled nicely with comb honey, and tell us through the JOURNAL, whether my shipping boxes find your appreciation, or, what objection you have to them, and oblige.

CHAS. F. MUTH.

[The shipping box and frames came duly to hand. Thanks. We certainly

think they will answer the purpose fully, and possess the merit of being cheap. Hoge's carrier is quite expensive. We are of the opinion, friend Muth, that your carrier would answer the purpose still better, if constructed to carry 16, instead of 32 sections. It is true, that it would add somewhat more to the expense of getting it up, but we think this would be more than counterbalanced in their being so much lighter, thereby insuring more safe handling.—W. J. A.]

Correspondence.

For the American Bee Journal.

Trouble.

Novice, under the above heading in *Gleanings*, page 61, February number, says that "two of our bee family" (Doolittle and Betsinger) "have got into a quarrel." We wish to say that this is *not true*, as Betsinger and Doolittle have *never* quarreled.

There is a difference of opinion between B. and myself in regard to the medal, to be sure; yet, this does not necessitate a quarrel, by any means! We have, however, two very unkind and unchristian letters in our possession from Novice, in which he accuses us of being a hypocrite, and trying to injure our friend Betsinger.

Novice also tells us in the same article, that "a number of our bee-keepers put in $7.00 each, and then one draws the whole, or at least $50.00 of it," &c. This is the first we ever heard of such a thing, and is *wholly untrue*, as far as we are concerned; and as we received the medal, we think we would have been called upon for the $7.00, if any one was to pay it.

Next, he says that Doolittle and Betsinger were to go in partnership for the medal, and if they took it, Betsinger was to have the credit for the box and Doolittle for the honey. This is as *untrue* as the other statements. Each of us, B. and ourselves, made crates to compete for the medal, while B. told Mr. Hoge at the time we sold our honey to Thurber & Co., that *he* should certainly get it, as no one had honey that would compare with his. Later, B. said to us (that is my better-half and myself) that he did not care which of us got the medal, as long as it was awarded on the boxes we used. He also made this statement to Mr. Hoge while we were in New York City, after my case of honey was stolen; that was all that was ever said in the matter between us.

Then, Novice says that "another case was selected from the lot of honey that Thurber & Co. purchased of Mr. D., and the medal was awarded to it," when the judges say it was not awarded "to any one crate of an exhibit, but that they considered the boxes of honey put into the fancy crate by Mr. Doolittle as excelling all others on exhibition!"

Messrs. Thurber & Co. also wrote me, soon after the medal was awarded, that they had christened our *fancy crate* the "Gold Medal Honey."

Novice next states that "black bees will, without question, make whiter-looking honey than the Italians." We have had several letters since the National Convention, stating that the honey in our fancy crate was the whitest and nicest honey on exhibition, and the nicest they ever saw; besides what the judges say. We can prove to any one caring to investigate, that we have had no black bees for five years.

Novice next says that "Mr. D. accuses Betsinger of having known of the blunder before the award, and of keeping still purposely." The truth is, we wrote Novice just the words a friend wrote us in the matter, leaving him to draw his own conclusions. We may have said it looked as though B. knew all about it before the award, or something to that intent.

Then, Novice tells us that "Betsinger stated truthfully that it was made by black bees." This cannot be so, for even Mr. Ranney's bees are mostly Italians and hybrids.

Next, Novice says we "made a most *desperate* effort to make it appear that the honey in question was not Ranney's, but our own, after all." Betsinger told me the second time I saw him after the Convention, that if I would send him either Ranney's honey statement or my own, he would prove the medal was awarded on crate No. 2 of Mr. Ranney's honey, and said I *dare* not send him either statement! To prove his knowledge in the matter, I sent him Ranney's statement purporting to be ours, and ours purporting to be Mr. Ranney's, and this was the "desperate effort" Novice alludes to. We were soon convinced we had not done right in thus *intending* to deceive Betsinger, even although he dared us to send him either statement; no matter which. So we sat down and wrote him, acknowledging our wrong, and asking his forgiveness, and soon had a letter from him saying he forgave it.

Next, Novice says, "Here is a copy of the statement sent the *Magazine*, knowing the the full facts as I have given them." We knew nothing of Betsinger's claim when we wrote the statement to the A. B. J. and B. K. M., and Novice had our letters in his possession telling him that no claim had been made of the medal being awarded on Mr. Ranney's honey when we made those two statements! And now he tells his readers that *we knew the full facts*, as he has given them!

Novice has a great deal to say about Satan, but a friend thinks if Satan had anything to do in the matter, that he must have certainly set the type for that article entitled "Trouble," for Novice could not have departed so far from truthfulness without his help. Now, we demand that Novice humbly acknowledges he has done wrong in this matter (no *if* I have done wrong in this matter; for he *knows* he has done wrong); or else tell his readers that all his boasted goodness, in *Gleanings*, is a *sham!*

G. M. Doolittle.

Borodino, N. Y., Feb. 12, 1878.

For the American Bee Journal.

Patents and Smokers.

DEAR EDITOR:—Although exceedingly busy, I feel that I must send a word to the JOURNAL on the subject of patents and smokers, as the welfare of our fraternity is in jeopardy; as also the rights of some of our most enterprising brothers.

I think that many people—and from the last JOURNAL I think this includes you, Mr. Editor—are in error on the patent question. Suppose a man has inventive genius, and then works day after day—yes, and night after night, to give us some valuable implement or machine, and thus aids us all, is he to be robbed of his *hard earnings*?—I think common morality, certainly a genuine, enlightened christianity will pronounce an emphatic—*No.* "Render to every man according to his due." Were I the inventor of, say, so unique, so neat, so perfect and so desirable an instrument as the Bingham smoker, I should feel that it was as much mine as my colonies of bees, and that he who should make it without my permit, as much a thief as though he took my bees or honey. If my property and generosity would permit me to give it to bee-keepers, then, surely, I should be worthy of much praise. But, if I was unable to do this, if I was poor and had a family, in which case I should be in duty bound to retain the right to a reasonable profit; and, if I did not think this would be granted by bee-keepers, I should certainly be excusable—nay, in honor bound to procure a patent, to protect me.

Again, *pride* and *generosity* might also tempt me to secure a patent. I should feel proud of my invention, and should want its style, finish and durability to honor the hard thought and long experiments, which it had received from me. I should also desire to save my brothers the evil of cheap imitations, and thus should wish to monopolize or control the manufacture, from motives of pure charity.

Again, Mr. Editor, if such rights are not to be secured or respected, what motive have men to strive to create these improvements, or, if each patentee is to be put to the expense of litigation, then we shall have to pay just so much more, and ought to.

I believe that had Mr. Langstroth's undoubted right to the movable frames been respected, bee-keepers would have been much better off, the money spent on worthless hives much less, while humbugging patent vendors would have plied a much less lucrative vocation.

Let us urge our people to caution, to look before they leap; never to purchase a patent till they know that it is valuable and needed. And let us stay this unkind, and unwise railing at patents or patentees.—The honest man, to be consistent, must do this, or else give up the use of all improvements.

WHAT, THEN, IS OUR DUTY TO SMOKERS?

Mr. Quinby brought to our attention the bellows combined with the tube, which had been previously in use, though I dare say he did not know it. He got no patent, and so said, "all use it." Let us honor him for the gift. His generosity was respected.—His smokers were not made by others, hence the price was kept up, and we are benefited by having well made smokers.

Mr. Bingham invents an improvement—not, as I once ignorantly stated, "essentially the same as the Quinby." The bellows, (I have taken them all apart), the tube, the valves, and the form are all much superior. It fact, in finish it is certainly admirable.

He did not patent for a time; and see, we have already a cheap, poorly-made imitation, not to be compared with the original, and yet, costing half as much. Now I am sure that bee-keepers will agree with me in the desire to have the best smokers with the best material, just as Mr. Bingham uses.

I believe the good of bee-keepers demands that Mr. Bingham's patent be respected; and I believe, too, that he should not be forced to contest the case in law. Such litigation will trouble all invention and raise prices.

For the good of bee-keepers, for justice, and morality, I hope no one will be disposed to contest the matter. Should I be mistaken, I hope bee-keepers will make common cause, and come to Mr. Bingham's aid. I write this solely on the ground of right.—I have no interest, only that right and justice prevail. A. J. COOK.

[Bro. Cook very frankly says he thinks us in error about patents. Perhaps so; we remarked that "we should have preferred that this invention (Bingham's smoker) might *not* have been covered by a patent." These are our sentiments still—it entails considerable expense, which finally comes out of those who use them. We do not dispute the right—only the desirability.—We do not say but that there is a good argument on the other side; that if the Langstroth hive patent had been respected, it might have been much better for bee-keepers in general,—but it certainly would have been much pleasanter in this case. We do not believe in stealing a man's pocket-book, reputation nor invention,—for "honesty *is* the best policy," at *all times*. —ED.]

For the American Bee Journal.

Hard Times.

MR. EDITOR.—I have noticed a peculiar feature in the reduction of the price of honey hoping to increase the demand.

Times are *hard* for one class because they are *easy* for another class. In my home market these two classes embrace nearly all of our population.

The poor are *too poor* to afford honey at even $1.00 per gallon. The other class will buy just as much at 15c. per lb. as they would at half that price. Hadn't we better consider these points carefully before we re-

duce prices? I often sell extracted honey to poor people with children (who ought to have honey to eat) for 8 and 10c. per lb. I also give away from $20 to $40 worth every year. In reply to J. H. Martin, Novice says: "We should rejoice if honey should go down to 5c. per lb."...."Can't we be happy in seeing others made happy?" &c. Now, Novice, you will make many persons who indulge in "tea-kettle feeders," "the smoker we prefer," &c., very "happy," if you will reduce your price-list of "surplus" one-half. Don't say you "can't afford it," as that plea applies with equal force to the producing class, and does not disprove your assertion that others would be made happy thereby.

Now, friend Novice, I want to ask you some questions, and as you are "too busy to stop to answer private correspondence," and others would like to hear your explanation, I will ask you through the JOURNAL the following:

If you didn't owe Mr. Burch $50, why did you pay him that amount?

If you did owe him, why did you not owe R. S. Becktell; and if you did owe R. S. B., why did you not pay him? He says he sent in a claim and found the "bank closed."

Did not the "new light" light up your sanctum sufficiently for you to see that you were appropriating Mr. Bingham's invention in smokers, compelling him to protect himself by law, and us who use his valuable invention, to foot the bill? Have you not injured Mr. B. or the producers, or both—for the gain of a *very few* dollars!

HONEY BOXES AND SECTIONS.

MR. EDITOR: Since my letter appeared in the report of the Michigan Convention, I have received letters inquiring about the honey boxes, sections and shipping-case therein referred to. As many may prefer to make the case at home, I will here describe it. As I use *low* sections and boxes, of course I pack two tiers in a case; for experience has taught me that when so packed, the honey carries just as safely and cleanly, and the case shows the honey better, and is much cheaper per capacity.

I use these cases for both glassed boxes and unglassed sections. Its dimensions are 12⅞ long, 10¼ wide and 9⅝ inches high, inside measure; ends ⅝, cover and bottom ⅜, side strips ½ inch. This case goes together just like the prize crate, only it is higher and has a centre side piece. The top and bottom are wide enough to come out flush with the outside of side-pieces, and I handle it by the side top-pieces, instead of slots in the ends, as I like to handle all cases at the *side* of the combs. I don't know which way is best.

The top and bottom side-pieces are rabbeted ⅛x3-16 on one inside corner, and the centre-piece on both inside corners. When I pack sections, without glass, I slip in two panes of glass on each side, each 3x13½ inches, and brad fast at each end.

In shipping-boxes I omit the glass. I make them neat, smooth and cheap; *not to be returned.* I prefer a little play between the boxes and case, to aid the connection between the comb and box to keep its solidity.

This case takes 20 sections 4⅛x6⅜, weighing about 1½ lbs. each, packed in two tiers, with sheet of manilla paper between. It also takes 8 two-comb boxes of about 4 lbs., 4 in each tier, and paper as before; also, 16 one-comb boxes, of 2 lbs. gross; also, 20 one-comb boxes (shorter) of about 1½ lbs. gross. Four of these short boxes run crosswise the case, and show the figuring or stamping on the wood to good advantage. All the other 16 show the honey. I call all *boxes* that are glassed; all sections or section-frames, that are not glassed before going to the bees.

I believe that the coming market will demand at least 2 or 3 sizes of packages, and perhaps the smallest size without glass; *all* sizes may sell best glassed. Time will decide. If one small comb *must* be glassed, I am in for the 4¾x5x2½ inch one-comb box, glassed *before* going on the hives.

My main aim in putting these boxes, &c., in the hands of bee-keepers, is to stimulate a pride in all to ask a paying price for their honey, and to hold it till it will *command* it; which course will be to the advantage of every producer. They take just 30 of the 4¼x4¼ sections, and the middle-piece protects the glass, and at the same time hides the tops and bottoms of the section frames or boxes, which Root's case does not do.

HEDDON'S SHIPPING CRATE.

The past season I stored some more than two-thirds of my comb-honey in the 4 lb. boxes, glass on two sides, and less than one-third of my crop in 1½ lb. sections, with no glass. I sold each style at the same price gross, and have had much more trouble to dispose of the part of the section honey that is sold, than all the box honey—which was sold long ago. As my case and hives are so arranged that they are adapted to all these sizes of boxes and sections, I shall make 1878 a year of experiment, as regards the best styles and sizes for the best market at home and abroad. I also mean to test for myself, thoroughly, the small boxes *vs.* large ones, as regards the bees accepting and filling them quickly. I have already settled my own mind on the honey-board question, and I am a honey-boardist.

JAMES HEDDON.

Dowagiac, Mich., Feb. 11, 1878.

DePere, Wis., Jan. 12, 1878.

"This has been a peculiar winter; the thermometer ranging from 12° below to 50° above, with rapid changes. My bee-house has 20-inch walls; two 6-inch spaces filled with bran, and a dead-air space, besides 4 inches of lumber. It has a loft above and 3 ventilators." F. A. DUNHAM.

For the American Bee Journal.

Honey, the Supply and the Demand.

The market price of honey tends downward. It is much less than it was a few years ago. It seems probable that those now producing honey, will, with their increased experience and facilities, be able to produce a larger amount. It seems probable, too, that not a few new producers will enter the field. With the supply of honey thus largely increased, it is probable that the market price will continue to fall.—This probability has led not a few thoughtful men to doubt the wisdom of continuing in the business of bee-culture themselves, and to think that it is unwise to encourage others to enter the business. Perhaps a study of the progress of some other branches of production may give us some light to guide us in the work of producing and selling honey.

I lived for several years among people whose income came from fruit-growing. It was a great pleasure to see the order and beauty of the many fruit-farms. In spring, the strawberry fields, the raspberry fields, the peach and pear orchards were seas of bloom. In early summer, the delightful fragrance of the strawberry was borne on every wind, and many thousands of bushels of the luscious fruit were sent to the markets of Philadelphia, New York and Boston. In autumn the peaches blushed on many a laden bough, and the grapes grew purple in the sunshine. Of the latter, several hundreds of tons, nicely put up in small boxes, were shipped every year. Living thus among people engaged in fruit-growing, it was not difficult for me to obtain some knowledge of the progress of the fruit business.

Thirty years ago the quantity of strawberries sent to the markets of the largest cities was small compared with the quantity now sent. A few growers, in the immediate vicinity of the large cities, supplied the whole demand. The berries were sent to market in neither elegant nor convenient style. But prices were high. Producers always found a ready sale. Soon they began to produce more largely, and to improve the style of their packages.—More persons took up the business. Some competition was aroused, which resulted in improving the varieties of the strawberry, and the elegance and convenience of berry-baskets and crates. Still the demand was large enough to absorb all the supply at good prices. Growers were stimulated to increased efforts. Many new growers took up the business. At last the markets were glutted, and prices fell very much. It was no uncommon thing for cargoes of berries to spoil and be thrown away. Soon prices were down so low that berries retailed for from 10 to 15 cents per quart. After paying freight, drayage, and commission, but a small sum, per quart, found its way to the pockets of the producers. The producers were nearly in despair.

The large quantity of fruit was, however, the means of advertising the fruit. It forced itself silently on the notice of the people. It was a fragrant and beautiful fact on rail-cars, steamboats and drays, in the markets and the fruit-dealers stalls.—People could not help seeing it; they could not help being attracted by its tempting lusciousness. And then it was *so cheap*, they could afford to buy a quart or two.—Moreover, the berries began to be found in every small and remote grocery, and fruit stand. Formerly, when the prices were high, they were for sale only at the places patronized by the wealthier people. But soon the dealers in poorer quarters found that their customers would buy them at the cheap rates. The consumption of berries was immensely increased. Soon the growers found that their largest crops were absorbed by the great cities, as regularly and certainly as a quantity of flour, or meat. The fact that the tempting fruit was right before the customer, and at such a low price that he could afford to buy, created a demand.

Ere long, the production of strawberries became a large industry. It now employs a large number of people in the states along the Atlantic coast, in quarters whence the berries can be sent to the great cities. The season opens early, with fruit from the south. As the glad summer creeps over the northern hills, it sends the health-bearing berries into all the cities, by every avenue of approach, both by water and land. Not until the middle of July does the Boston market get its last consignments from fertile nooks among the hills of New Hampshire and Vermont. The growers, south and north, do not get large prices. They do not get suddenly rich, but they do find a demand for their product, at prices which enable them to live comfortably. They have a regular, legitimate, honorable business. They have disasters, now and then. An unfavorable season cuts off the crop.—A very large yield puts prices away down to almost nothing. But in spite of occasional disasters, the growers succeed very well.

I have spoken about growing strawberries because with that I am somewhat familiar. But what is true of growing strawberries is true, essentially, of growing peaches, grapes, apples and sweet potatoes. It is true, also, of the manufacturing of cotton and woolen goods. If we choose to go into the statistics of sugar, tea and coffee, we should find that the production of these articles has had a similar history.

After looking at the above facts, and at others in the same line, which will readily suggest themselves to thoughtful people, could a person be accused of reasoning on false and insufficient premises, if he should affirm the following propositions?

1. Bee-keeping will continue for some years to come to attract capital and intelligent labor.

2. Intelligent bee-keepers will continue to make improvements in the science of bee-culture, until the business reaches its greatest normal capacity of production.

3. The increased number of producers, and the improved methods will result in a largely increased production of bees, honey and wax.

4. This large production will continue to put prices down until they will be a good

deal lower than they now are.

5. This lower price will create a demand. The consumption of honey will be very largely increased.

6. Although the producer will receive a less price per pound, he can make much larger profits than now. Suppose, now a producer sells one pound of superior comb honey for 20 cents, and makes, above all expense of production, ten cents. By and by, improved methods of management may enable him to produce comb honey at an actual cost of eight cents per pound. If, then, the demand increases so that he can sell a hundred pounds, at nine cents a pound, where he now sells one pound at 20 cents a pound, he will be a large gainer; he will gain 100 cents on the sale of 100 pounds, just as easily as he now gains 10 cents by sale of one pound.

It seems to me that bee-kepers must take some such view of their business as the one I have here sketched so briefly and imperfectly. It is nearly certain that a larger amount of honey will be produced, and that prices will be lower. To lament about this is useless and foolish. Rational men will turn their attention to lessening the cost of production, and to increasing the demand so largely, that, in spite of low prices, a living income may be obtained.

Keokuk, Iowa, Feb. 8, 1878. O. CLUTE.

For the American Bee Journal.

Spring Dwindling of Italians.

THE CAUSE AND THE REMEDY.

MR. EDITOR:—My experience with Italian bees has been somewhat limited, having only introduced them into my apiary about two years ago. But since that time I have been a close observer of their habits, marking their merits and demerits in contrast with our native black bees. From this brief experience I am led to believe that if we give the Italians the attention their nature requires, we will find them much more profitable to us than black bees.

A few words with reference to the manner in which I winter my bees will lead me to the thoughts I wish to express about spring dwindling. I have now twenty colonies of bees in my cellar; nineteen of them are Italians. At this time (Jan. 9th) they are in good condition. My cellar is dry, dark, well ventilated, and free from disturbance. Each hive is also ventilated, by leaving the entrance and honey-board open. The tops are elevated at one end so that there is a free circulation of air. With this precaution no moisture collects in the hives, and the combs come out clean and dry in the spring. For the last four years I have wintered my bees in this manner without losing a *single* colony, nor have I lost any (natives or Italians) from dwindling away in the spring. I think it is fair for me to attribute my success alone to good management.

Spring dwindling, I believe, comes from a **lack of good management.**

Italians are more energetic, more industrious, more *daring*, than black bees. They will venture out when their owner will shiver in his overcoat. My attention was first called to this fact one cool, chilly morning, a few years ago, on seeing about a dozen Italians busily at work upon a little piece of honey-comb that had been thrown into the yard from the breakfast table. Here was this tempting morsel not ten feet from my colonies of black bees, and yet not one of them had found it. A neighbor, a half mile away, had one or two hives of Italians. There were no others in the neighborhood. I have noticed, at other times, that when a honey-box has been emptied and left in an out-house, the Italians will find it when it is so cold that black bees will not venture out. I conclude, therefore, that Italians will often lose their lives by venturing out on cold, chilly days in spring time.

The remedy is confinement. Let them be put away in a dry, dark cellar, as described above, as soon as winter has fully set in, and *keep* them there till spring, being careful to return them to the identical spot they occupied the summer before. This last precaution is of great importance. In the evening, *after dark*, is the proper time for carrying your bees from the cellar; then they will be quietly settled before morning. There is not so much danger of a panic the following day, if carried out in the evening. It is unsafe to do this when there is much snow on the ground, even if the day is warm, and the snow melting rapidly. In their first flight after confinement, they are almost certain to take a rest before returning to their hive, and those alighting on snow, or on the cold, wet ground, will soon become chilled and perish. It will not take long to deplete a colony under such circumstances. I neglected saying above that every colony should be sheltered from the sun, especially at this trying season of the year. My apiary is on a little hillside facing the north, and so my bees are seldom enticed out by the warm sun, when the air is too cold for them.

Burlington, Iowa. I. P. WILSON.

For the American Bee Journal.

Bibulous Bees.

San Diego, Cal., Jan. 21, 1878.

I notice in the Dec. number an article copied from the *Los Angeles Herald*, which quotes the opinion of Chalmers Scott, Esq., that bees do great injury to the fruit crop.—Mr. Scott and I are intimate friends, and we have frequently discussed this subject, and during the past year I have given it careful study. It is true that where bees are numerous they do injure the grape crop, and in this way: Bees cannot puncture the skin of a sound grape, but, if it is cracked, or any way defective, they soon suck it dry. Grapes grow here very luxuriently, bunches weighing from 1 to 4 pounds each. When nearly ripe, a good many berries part a little from the stem, and, frequently, birds and some insects puncture them, and these are destroyed by the bees. For sale, for table use, they are much injured, as it impairs the appearance of the bunches, but for making wine, the loss is small; very much less than is caused by birds, gophers, rabbits, etc. The past year being one of almost total failure of the honey crop, bees were more troublesome than usual; but so

all animals were. The failure of the grape crop can more justly be attributed to the dry season than to the bees. In regard to the oranges, no botanist believes that the extraction of honey from the blossoms injures the fruit, nor that if fruit sets at all it can be dwarfed, or stunted by anything that can have happened to the blossoms. That is also due to the dry seasons.

Bees have a great aversion to feeding where sheep have been grazing, seeming to dislike the smell left by the sheep. The latter, also, do great injury to the sage, by breaking it down during the dry season; they do not eat it. The above is as near the facts as I can get. We are having plenty of rain this winter, and prospects are good for crops of all kinds.

CHAS. J. FOX,
Pres't. San Diego Bee-keepers' As'n.

Los Angeles, Cal., Jan. 12, 1878.

"MR. EDITOR.—In the December JOURNAL, under the heading of 'Bibulous Bees,' you ask the California 'bee kings' if Col. Chalmers Scott is correct in saying that the bees have developed a great fondness for orange and grape blossoms. It is, and they are equally fond of pumpkin and other blossoms. When wine sold for 50 to 75 cts. per gallon, they made 4,000 to 5,000 gallons of wine; but now, as it can be bought for 15 to 25 cts., the fashion has changed. They make a great deal of it now into brandy—but why blame the bees for it? The dwarfing of the orange, by the bees feeding on the blossoms is too ridiculous for comment. In the summer of 1877, I frequently passed through a large flock of sheep, that were feeding among large quantities of white sage, while the bees were humming on every branch. BEE KING.

[So, it appears, the bees have been slandered again. To commerce, and not to the bees, it seems to be chargeable that the vintage of California has greatly diminished. Instead of the fruit being "dwarfed" by their working on the blossoms—the *prices* are "dwarfed," making it unprofitable to gather the vintage! For several years, a similar "shrinkage" has prevailed in "real estate," in "dry goods," and in many other things—why not charge all such in a lump to the bees?—ED.]

For the American Bee Journal.

"Say"

To R. M. Argo that he hit the nail "square" on the head, when saying that "Bees require everything done at exactly the right time, or there is no success with them."—There it is, in just 16 words—the first nine tell you what you must do, and the last seven give the penalty if you don't do it!

To talk about "light work," "fit for invalids," "all profit," etc., is all nonsense! All bee-keepers, who keep enough to make them an object, often have their clothing soaking wet with perspiration, as friend Argo and myself know full well, and find *plenty* of *hard* work. Ask Doolittle, Betsinger, Palmer, Hetherington, L. C. Root, or any successful bee-keeper, and hear what *they* say. It may be fun to keep 8 or 10 colonies of bees, if a man has something else to get "phatt" on. But to get much from his bees he must make up his mind to *work*. F. I. SAGE.

Wethersfield, Conn.

[True, Oh *sage* philosopher; thou reasonest well! To own a few bees may be *fun*; but an apiarist who looks for profit by scientific management, finds the work not so funny! Friends Hetherington, Betsinger, Doolittle and others work hard in their apiaries during the season, and only by persistent work and scientific management do they obtain such satisfactory results.—ED.]

For the American Bee Journal.

Springing Bees.

It is probably conceded that in the colder latitudes, bees should have some protection during the winter. A dry, dark cellar *properly ventilated* answers very well.—All have not such a cellar, and it is attended with some trouble to remove them from their summer stands in the fall, watch the ventilation during the winter and return them to their summer stands in the spring. The same trouble exists if a special depository is built, convenient to the apiary; it, however, has this advantage: It is a nice place to extract honey, and keep tools and implements in the summer, but—it costs money.

Many are placing the hives within a large dry goods box, upon the summer stands, filling *all around* with chaff, preparing a passage way out for a fly-hole and ventilation, to be nearly closed when the thermometer indicates 45° or less. The top of the hive is covered with one thickness of a common bed-quilt, with 6 or 8 inches of chaff upon it, after placing half a dozen ¼ inch pieces of lath across the frames, and in the common box hive, opening all the holes on the top of the hive that the steam may escape. I am of the opinion that 8 or 10 inches of chaff all around would not be too much; still less would be better than nothing.

One advantage in this mode of wintering is that it gives an opportunity for a purifying flight, occasionally, during the winter, which may be the salvation of the apiary if dysentery prevails, and it can do no harm if it is absent.

Bees can be wintered pretty well by either of the above methods, but the *springing* needs some attention. I have not noticed, in my reading, any rule or guide for it. We bring our bees out of the cellar or other depository in the spring and examine them. They have wintered very well. We wish to do so, early, for fear they may positively stand in need of a purifying flight. We could return them again, but it is attended with some labor and trouble, and perhaps before the half of them are set out or the half of any one swarm have had flight the air becomes cold; some are chilled

and lost; and we must return them to the depository and wait again for a fair day to repeat the operation.

I am of the opinion that when they have had a good flight they should be returned to the depository and *remain until all the earlier varieties of willow and soft maple are out of bloom.* The maple blossoms last but about 10 or 12 days, and, one year with another, the bees do not work on an average to exceed three days on them, and but little, if any longer, on the willows; and, during all this time, they are dwindling away like an incurable, consumptive, human body. The number of owners of honey or pollen is but a trifle, comparitively, still it would be of great value as a stimulent—but it also stimulates the old bees to the fields, to their destruction on chilly days. Is this necessary? No!—Stimulate them within doors with honey, syrup, rye or other flour.

But how are we to keep those that are wintered on their summer stands from going to the fields for the willows and soft maples? Suppose we construct a sort of a park for them to fly in, in confinement, after they have had a good purifying flight in the open air. The machine, cage or park, might be constructed, say 2 feet square, more or less, perhaps not much less, and thus: The top and bottom of tight boards, the four corners of light posts, an inch square; the sides and ends covered with mosquito netting, and an opening in one side to admit the ingress and egress of the bees; also a hole or trap door, by which to introduce feed—to stimulate. This door may be through the top or bottom. Connect the machine to the front of the hive, or rather the box in which the hive is enclosed, and fasten so tight that a bee cannot escape; place the honey and flour near the entrance, for stimulation or food, let the machine be fastened by some simple contrivance, that it can be attached or removed readily, at pleasure.

This apparatus can cost but a nominal sum. Any person that has mechanism enough to handle bees can make and attach it when necessary. The netting costs but little.

Again, would it not be advantageous to place it upon the hive prior to the time of their purifying flight, in the event of there being snow on the ground, as many fall upon it and are chilled and lost? Let them have their flight within this apparatus; I think such a flight in confinement will answer the purpose. Mr. H. E. Bidwell, of South Haven, Michigan, gave 80 swarms such a flight several times in the winter of 1874-5, by placing as many as 16 swarms at a time in a cold frame, 12 by 6 feet, with but 15 or 20 inches space above the hive. It may be said, that when there is no snow, the mouth of the hive may be closed with wire cloth; after they have had a good flight, there is much danger of their becoming uneasy, also of their dragging their dead to the entrance, closing it up and being smothered.

I have not had an opportunity to try this cage, but shall immediately, and believe it will work. MOOSH AMIEL.

Wayne, Mich., Feb. 1, 1878.

For the American Bee Journal.

An Amusing Incident.

FRIEND NEWMAN.—Having met with an accident in the shape of a saw-log, which saw fit to run over my legs, thereby confining me to the house, and having no bee man to visit with, I thought of the AMERICAN BEE JOURNAL, and concluded to tell you how, during the swarming season, last year, 1877, I saved one swarm of bees by losing another. I think it would puzzle the best of us to think how it could be done, and still it was a very simple thing to happen, though not intended.

I had a large swarm come out and settle upon a tall, leaning, white-wood tree over my apiary. The tree was so tall and the bees so far up that I did not dare try to get them by going up after them, for fear the tree might break by my weight upon it. So I had to let them be. They staid all day and all night, and the next morning I was provoked to see them still clustered there, knowing I should have other swarms out and that they would be sure to go for that cluster. Soon I saw a swarm pouring out of a hive, I ran to the hive and watched for the queen and as soon as she showed herself, I caught her. Then I looked for the bees, and saw them piling on to the cluster on the tree, and it was a large one, too. I put the queen in a cage and put her down by the hive, then went to cutting out the queen cells, as I was going to put the queen back as soon as the bees got all settled. I did not want to have them swarm out again. In a few minutes, the bees came piling back, and not only the swarm that left there, but the swarm that had stayed on the tree all night. So I had a surplus queen and saved one swarm by losing another, or rather, I saved them both.

A. C. BALCH.

Kalamazoo, Mich., Jan. 23, 1878.

From the Rural Sun.

Artificial Swarming.

"What is the best plan or method of artificial swarming?"

To come as near filling the condition of natural swarming as possible is undoubtedly the best. Now we will examine the conditions of natural swarming. Just before swarming the colony is very populous, but does not contain bees enough for two swarms, as many would suppose, but enough for one swarm and enough left to care for the brood in the old hive. The hive is generally well filled with comb, brood and honey. There are from twenty to thirty thousand young bees (brood) in different stages of development from the eggs in a good colony just before swarming. The colony, also, has a good fertile queen. This is the condition of the colony just before swarming, with young bees continually hatching. After the swarm has issued, we find the old hive as follows: All the comb and brood is still left in the old hive; also, all the honey, except what the swarm could carry with it, and a very few bees left in the hive, just enough to nurse the brood and

guard the hive—however, all the bees that are out in the fields at the time the swarm issues, will return to the old hive—and no queen, as she went out with the swarm. But we generally find queen-cells containing the royal larvæ, sealed or unsealed, which will develop into young queens in a few days, in the old hive. Such is the condition of the old colony immediately after the swarm has issued.

To summarize: The old hive is full of comb, plenty of honey, twenty to thirty thousand young bees in all stages of development, called the brood, and a few bees to nurse and care for the brood, but no queen; therefore, it will be several days before the old hive contains a good swarm of working bees and a laying queen, for eight or ten days must elapse before a queen and any considerable number of bees are developed.

Now we turn to the swarm that has just issued; having hived them in a new hive, we find the queen with nearly all the bees that are able to fly—old and young, nurses, comb-builders and honey-gathers. It is true, they have neither comb, honey—except what they carried in their honey sacs — nor brood, but they have all the workers to begin anew and fill their hive with comb, brood and honey. Such is the natural swarming, or swarming according to their instinct or habits.

The best methods of artificial swarming must therefore be similar. And now for the plan that will give each hive its due proportion of honey-gatherers, comb-builders and nurses, etc., as near as possible.

First, stimulate your bees by feeding early in the season to make them strong; and when they have started queen-cells, or if they do not start them soon enough for you, divide them by taking half the combs, bees and all, from the old hive and setting them in the new one, replacing them with the empty frames from the new hive. Set the old hive a little to one side, and the new one a little to the other, and thus get the bees as near equally divided as you can. If you notice more bees going into one hive than the other move it a little further off, and *vice versa;* you can generally tell if you do not know which has the queen by their uneasiness, running all over and around the front of the hive in search of her.

About the twelfth day after the division examine the queenless hive, and cut out all the queen-cells but one, and secure them in cages as directed for Italianizing. Then go to the colony you wish to swarm, take two-thirds or more of the comb from the old hive, shaking most of the adhering bees off into the old hive, set them in the new hive close up to the end, setting the empty frames of the new hive between the combs, alternately, in the old hive; cut out a piece in one of the combs in the new hive and fit in your cage containing your queen-cell, close up your hives and equalize the bees as before directed. By that means you get the most of the young bees, plenty of the older ones, and the queen in the old hive. Although it has but two or three, or prehaps four cards of comb, it has the working force and will soon fill up again, when the same process may be repeated. While the new hive has but few bees it has the most of the brood and a queen-cell that will hatch in four days or less time, you get honey-gatherers and comb-builders etc., in each hive.

About the third day, or perhaps sooner, the young queen will hatch; then examine and see if the bees have started any queen-cells in the new hive; if they have, cut them out before liberating the young queen; in a few days she will be laying, and everything moving on all right; and in a short time the new hive will be full and you can swarm it the same way.

Remember, in making swarms on this plan, to always have the queen in the old hive. R. H. ANTHONY.

Tullahoma, Tennessee, Feb. 2, 1878.

Mich. Agricultural College Apiary Report for 1877.

METHODS ADOPTED.

The following methods were adopted in preparation for the winter of 1876-7. 13 of the 19 colonies were put into the apiary cellar, which is dry, dark, quiet, well-ventilated, and which preserved a temperature of from 35° to 46° Fahrenheit.

Three colonies were buried. A hole was dug in the side of a hill, where the soil was of light sand. Some straw was put in the bottom, on which the hives were set. The top of the hives reached the plane of the general surface level. A mound of straw was then laid on the hives, which was covered with about 4 inches of earth. A second layer of straw was then added, which was also covered, like the first. At the apex of the cone, was left projecting a twist of straw, 3 inches in diameter, which, though uncovered with earth, was so protected with a board as to keep the straw dry. About the base of the mound a trench was dug, which opened on the down-hill side.—During the severe weather of December, when the thermometer marked 19° below zero, a load of manure was added to the mound.

The 3 remaining colonies were arranged as follows: About the hives, except at the front, which faces the east, boards were placed, leaving a space of one foot between them and the hive, and extending one foot above the hives. The enclosed space was then crowded with straw, which also covered the hives one foot. Two of these were protected from wet by a close-fitting cover, while the third was left open at the top, so the straw would become wet and frozen.

CONDITION OF THE COLONIES.

All the colonies in the apiary had young, prolific queens, except in case of one, whose queen was imported, and which contained brood in October. They were examined for the last time in October, when all uncapped honey was thrown from the cells, and each colony provided by weight with 30 lbs. of capped honey. This took eight frames of comb, though in a few cases nine were required. The frames containing the most empty cells were placed in the center, and all the combs received a central opening, cylindrical in form, ¾ of an inch in

diameter. A portion of the colonies received bee-bread; others were left wholly destitute of the same. At the end of the space occupied by combs, a division board was placed, so that the bees of each colony occupied a chamber, whose dimensions were about a foot each way. Above the frames a quilt was placed, which hung over the division-board; and above this was a sack, made of coarse, unbleached factory, and filled with chaff.

EXPERIMENTS MADE.

The burying of hives was tried as an experiment, as I have long thought that with proper ventilation, and adjustment of earth, straw, etc., this would prove a very successful method, which if reliable, would possess the merits of being cheap, convenient, and practicable for all and in all places.

In February the colonies in the cellar were all removed to their summer stands, and permitted to fly. They all seemed in fine condition, and after a lively frolic were returned to their cellar quarters. In returning to the cellar, a satisfactory but expensive experiment was tried with one of the strongest colonies. The hive was closely shut up above and below, so that no ventilation was permitted other than that between two smooth boards, one of which rested on the other.

All the colonies were examined and weighed, April 4; and those in the cellar and those buried placed on their summer stands.

CONDITION IN SPRING.

Of the colonies buried, one was so moved in the process that all ventilation was cut off. The bees in this were all dead, though they had lived to breed some. The other two colonies showed a good many dead bees, and some soiling of the hives, but were lively, had some brood, and were in a fair condition.

The colonies that were packed, including the one with straw, uncovered, were all strong, and except one, that had no pollen, contained brood.

The colonies that were wintered in the cellar were generally in good condition, and all that had bee-bread contained brood.

The one with no ventilation was extremely weak, and survived removal to the summer stand but a few days. One colony, whose queen was reared the last of the previous September, was queenless, and the one with the imported queen became so in a few days. These two colonies were united with others. So we commenced the season with 15 out of the 19 colonies.

The average consumption of honey was as follows: The colonies which were buried, 6½ lbs.; those packed in straw, 15 lbs.; and those wintered in the cellar, 7 lbs.

Probably, the very warm February accounts for the large excess of consumption of the bees surrounded by straw. For days together, during that month, the bees were out in force. Had the straw entirely surrounded the hives, the result might have been different, as in that case the bees would not have been induced to take such frequent flights.

Pollen was brought in, for the first, on April 7, while we commenced feeding April 4; so the bees commenced to work at once, and we had no trouble with "spring dwindling." Our increase was entirely by dividing. We sold 3 colonies in the spring, captured one foreign swarm, which alighted on the grounds in June, had one colony stolen in October, and now have 28 colonies.

A POOR HONEY SEASON.

The season has been the poorest I ever knew in this locality. The yield of honey from white clover was excellent. This admirable honey plant was very abundant, and seemed full of nectar. The yield from basswood was very poor, and that from fall bloom but little better. Our financial showing, however, is not discouraging.—Our net cash receipts at the close of the season will be about $100. Add to this the increase in our inventory, all of which has been made by proceeds from the apiary, and we find

THE INCOME.

from the apiary to be over $200. If we divide this by 19, the number of colonies with which we began the winter, we find the proceeds to be over $11 per colony.—Divide by 15, the number of colonies with which we began the season, and we find the net proceeds to be $14 to each colony. In the above account I have not counted my own time. Every other expense of whatever kind is included. My own time was mostly spent in conducting and directing experiments. In fact, much more labor than was necessary to care for the bees was paid for by money from apiary receipts, and hence considered in the above account.—All labor and expense on beds of experimental plants, amounting to nearly $40, all labor on other experiments which were being conducted through the season, all labor in improving grounds, amounting to about $10, are noticed on the expense side of the above account, and not at all on the side of receipts; so that the above estimates of $11 and $14, as the net receipts per colony, is rather too low than too high. Our net proceeds for the year is about 50 per cent. of our entire capital at the beginning of the year.

We have taken 321 lbs. of comb honey, and 667½ lbs. of extracted honey. The former has all been sold or contracted at an average of 20 cts. per pound; the latter at an average of 15 cents.

CONSTRUCTION OF HIVES.

Early in the season we procured a Barnes foot-power saw, an an expense of $35, with which we have made all our hives, frames, etc. This is not only very desirable, but it, or some similar machine should be considered indispensable by any apiarist who keeps more than 20 colonies of bees, and desires the best success. If it is desired to unite the sides of the hive with a beveled joint, this permits it; and not only this, but the joint is perfect. The same is true as to the joint between the different stories of a hive. In preparation of frames, too, in fact in all the carpentry of the apiary, this makes it easy for any one, with a reasona-

ble degree of caution, to have perfect accuracy and uniformity—those most desirable characteristics—of all the apparatus of the apiary. I have also had, during the season for honey gathering,

A HIVE SUSPENDED

by spring scales. This was a new colony, of not more than average strength. During the white clover season this showed on some days an increase of 7 lbs., and once of 8 lbs. During basswood gathering, 2 or 3 lbs. was the maximum; while frequently, after very wet days, of which there were many, there was an actual loss of one or two pounds. During the interim of honey-secretion, between basswood and fall bloom, there was a steady loss of 1 or 2 lbs. per day. The showing during the fall bloom was similar to that during the basswood. The scales showed graphically, what observation had demonstrated long previously, that continued wet weather is not conducive to honey secretion. The scales also showed that when active, as in summer, even though no brood is being reared, the consumption of honey is much greater than during the quiet of winter.

We practiced during the season the Dadant, the Alley, and all other methods we have heard of,

OF INTRODUCING QUEENS,

and have nothing to change in what we said in the manual of the apiary, and in the report of the State Board of Agriculture for 1875 on this subject. Early in the season we prepared several more stands for bees, with evergreens for shade, and brick and saw-dust for a foundation.

BEE-SMOKERS.

We have used three smokers during the season; the Quinby, the Bingham, and the A. I. Root. It was the unanimous decision of my class, my able assistant and myself, that the Bingham smoker was superior. It seems strongest, has a superior draft, and troubles very little by going out and requiring re-lighting. It also stands up better, having a broader base than does the Quinby, and is much more convenient in form than the A. I. Root.

MARKETING HONEY.

We have experimented quite largely in reference to marketing honey, putting honey, both comb and extracted, in the market in various forms. Nor were we satisfied with a trial of one dealer, but we tried various dealers, and even went to other towns. Extracted honey was put up in fruit jars, jelly cups, Muth's honey jars, and delivered in large tin cans. As to labels, we tried putting them on the vessels and also making large, neat labels and framing them. These labels gave the kind of honey, grade and apiary. We were very particular to grade our honey closely; first-class meant just that. We also secured comb honey in boxes, six inches each way, with glass sides, in large wooden boxes with glass ends, in section frames one and two deep above the brood chamber, with tin separators, with thin wood separators, and in case of one tier deep, the commodious wooden separator of Mr. Severson, of Randallsville, N. Y. We thus had opportunity to test the values of the different separators.

THE CONCLUSIONS

on these various points are as follows: We can create a demand for extracted honey, greatly to our own and the purchaser's advantage. Extracted honey sells best in jelly cups. A large label in frame is best. In delivering honey, no pains should be spared to have everything neat. Thorough grading, too, in quality and price, is very important. To invite customers, the honey should not be granulated, and to secure the best results, each grocer should be made acquainted with the means of re-liquifying, and told specially not to apply too great heat, as this injures both the flavor and appearance of the honey. To best secure the desired end, the granulated honey should be placed in a vessel, and this placed in a second vessel containing water, which should be heated to about 175° fahr., or even 200° fahr. will do no harm. If the honey vessel is placed in the other, and all heated on the stove, some bits of wood, or a saucer must be placed underneath the honey vessel to prevent its getting too hot.

Comb honey, unquestionably, sells best in small section-frames, and, beyond question, more can be got in this form than in boxes. To hold these small frames, we should have large frames just the size of our common frames, except that they should be two inches deep. The small frames should be of such a size that 4 or 6 would just fill a large frame. Dr. Southard, of Kalamazoo, makes a very convenient rack to hold the sections. The small frames will sell best when they hold about one pound. If it is not desired to have more than one tier of these small frames above the brood-chamber, then Dr. Southard's rack, or the patented arrangement of Mr. Severson is very convenient and admirable. In this case, the top bar is 2 inches wide and serves as a top to the 2, 3, or 4 small frames that hang below. Between these hangs a ⅜ inch strip of clean, white pine, which reaches not quite to the bottom, just leaving space sufficient for the bees to enter the frames. On the top of this thin strip is tacked a half-round strip, ½ inch across the bottom. This, by resting on the top bars of two adjacent sections, keeps the thin strips, or separators from falling, and the bees from passing above. These wooden separators served as well as the tin separators of Betsinger sections, so far as we could see.—In both cases it was rare to find the comb glued to the separators, and if we are satisfied to have these small frames but one deep, I think they are cheaper and more convenient.

I tried the method of Mr. Baldridge, of St. Charles,—uncapping the honey,—to induce the bees to carry it from the brood chamber to the boxes, with very admirable success.

COMB FOUNDATION.

This was used with considerable success during the entire season. For guides, using it 2 or 3 inches wide, both in the brood-

combs and in the surplus frames, it is a grand success. If it could be so made as not to sag, and thus used in the brood-chamber as foundation for all the comb, so that we could secure perforce all worker brood-comb, it would be a still greater advantage. We must reach this. I fastened the foundation by simply pressing it to the wood. I used the artificial comb foundation for sections with the happiest results. Epicures, even, did not detect the difference, and so of course found no fault.

We proved again the great

VALUE OF THE EXTRACTOR.

With proper use, it will pay for itself in a single season, even with no more than two colonies of bees. A thorough trial of the Muth extractor convinced us that it was inferior to A. I. Root's, which we still think the best of the many we have seen tried.

We had 3 of

THE RUSSELL HIVES,

made by A. H. Russell, of Adrian, in use all the season. These are certainly no infringement on the Langstroth, though I find in Bevan on the Honey Bee, a description of essentially the same thing. These hives are very good, though hardly as convenient as the Langstroth style. Without any guides, the combs were all built perfectly true. There is no difficulty in separating the combs, though in putting them together some time and caution is required to avoid killing bees. The claim of superiority for out-door wintering I shall test the coming winter. We have also tried Mr. Russell's box, which only differs from the Isham frame in the mode of fastening the tin corner. As a box it has no superior; and as the width may be varied so as to contain 3 combs, 2 combs, or 1 comb, it is convenient, and perhaps has no superior if it is desired to have the comb surrounded on both sides and ends by glass. A rack like Dr. Southard's, permitting the removal of all these boxes or frames at once, would be a valuable addition.

HONEY PLANTS.

We have experimented farther with honey plants. Having had beds of mignonette, alsike sweet, alfalfa, also called Lucerne and Spanish trefoil, yellow Bokhara, Italian or scarlet trefoil, white Dutch, or white and yellow trefoil clovers, Rocky Mountain bee-plant, or cleome, white and black mustard, which we have bought for two years under the name of dwarf and tall Chinese, catnip, motherwort, rape, borage, sainfoin, and silver-leaf buckwheat. Of these, the following can hardly be recommended too highly: White clover and alsike, in bloom all through June and into July. Mignonette and sweet clover in bloom as early as June 22, the former continuing the year, and the latter for a month, and both yielding bountifully of the most delicious honey. This year was unfavorable and our mignonette did very poorly, yet from the reports of others and our experience in former years, I heartily recommend it. Both of the above are admirable for their exquisite perfume, which renders the atmosphere delightful for long distances.—White Mustard blooms in from four to five weeks from planting, and the black mustard in 7 to 8 weeks. They are both excellent; swarming with bees, especially during the forenoon, through the entire season of bloom. The former continues in bloom about four weeks, the second some longer. Like borage, these seem less affected by climate conditions than most plants, being thronged by bees even after heavy rains.—Rape, much like white mustard, blooms in about 4 weeks after sowing. Borage commences to bloom, if planted the first of May or self-sown, the last of June and continues till frosts. Cleome, or Rocky mountain bee-plant, if planted early or self-sown, commences to bloom the middle of July, and continues for more than a month, yielding liberally of the most excellent honey. Catnip and motherwort deserve their high repute. The first commences to bloom late in July, the other late in June.—Silver-leaf buckwheat is only better than the common in that it yields better, and thus has more flowers. The other plants mentioned in the list seemed worthless as bee-plants. How much of this was owing to the unfavorable season, it is difficult to say. Early in the season several honey-trees were transplanted to our grounds, among which were hard and soft maple, basswood and crab-apples.

PLANNING FOR THE FUTURE.

The various methods of wintering, as described above, proved so successful that we shall practice each the coming winter.—12 colonies we shall put in the cellar, 5 we shall bury, 2 in Russell hives we shall not protect at all, and the 9 remaining colonies we shall pack in straw, varying our method as follows: Our hives are 1¼ feet long and 1 foot wide. We shall make the sides of the surrounding box 2½ feet long and 2½ feet high at one end and 6 inches higher at the other. The upper, slanting edge is made by sawing a board 2½ feet long and 6 inches wide diagonally across from corner to corner. One end will be 2 feet long and 3 feet high; the other 2 feet long and 2¼ feet high. These sides will be made of 6 inch boards, fastened together by nailing cleats one inch from each end. These cleats will be on the inside and and will thus form shoulders at the corners. The sides will not be nailed together, but fastened by a staple and nail, so they can be taken down and packed away in summer. The east side of this box, opposite the entrance of the hive, will have a central opening, 4 inches square, with a square tunnel extending from it to the entrance. This will permit the bees to fly, and at the same time allow the hive to be entirely surrounded by straw. The top of the box will be made of matched lumber, fastened together by cleats as before, which will project over the ends of the box so as to hold the cover to it. The cover will incline to the south, while the boards composing it will extend lengthwise in the same direction. This box will cost $1.00; will permit flight, but from its entirely surrounding the hive and confining a layer of straw, densely packed, it is expected that it will prevent much flying, and thus

economize in the consumption of food.—Such boxes may be placed about the hive, even in winter if neglected earlier, with great advantage, only when crowding in the straw we should be careful to disturb the bees as little as possible. Putting bees in cellar during the cold of winter is never to be recommended.

Before closing this report, I must express my very high appreciation of my assistant for the past season, Mr. Fisk Bangs, a graduate of 1876, whose close attention to the experiments and needs of the bees, faithfulness in all his duties, efficiency in all the varied labors of the apiary, has made him a very valuable assistant. A. J. COOK.

Lansing, Mich.

For the American Bee Journal.

Chips from Sweet Home.

So far we have no plants that will pay to cultivate for honey. But there are several which pay well for the fruit and honey, and none better than the raspberry. A. F. Moon says of it in The Apiary, page 55, 'the raspberry seems to be a special favorite with the bees, and yields a very fine harvest.'—Langstroth, in his book on the Honey Bee, page 296, says, 'The raspberry furnishes a most delicious honey. In flavor it is superior to that from the white clover, while its delicate comb almost melts in the mouth... When it is in blossom, bees hold even white clover in light esteem. Its drooping blossoms protect the honey from moisture, and they can work upon it when the weather is so wet that they can obtain nothing from the upright blossoms of the clover. As it furnishes a succession of flowers for some weeks, it yields a supply almost as lasting as the white clover. The precipitous and rocky lands, where it most abounds, might be made almost as valuable as some of the vine-clad terraces of the mountain districts of Europe.' By planting a few varieties, bloom may be had from May 25, (with us), till frost. Among the earliest and most valuable are Davidson's Thornless, Doolittle, Purple Cane and Miami; next, Mammoth Cluster, Seneca, and Golden Thornless; and among the latest, Lumb's Everbearer and Sweet Home. (For a description of this, see our advertisement in this paper, under our old heading). Not only do these varieties keep up a succession of blossoms, from which the bees never fail to get honey, but the bee-keeper is certain of a crop of fruit every year, averaging from 1 to 10 qts. to the bush, which will contribute to health, comfort, and economy—save butchers' and grocers' bills, and make home pleasant.

HONEY BOXES.

What honey-box is Palmer going to use the coming season? One of my errands East, was to decide what honey-box to use, as I found the Harbison was behind the times for eastern markets. I now think of using a combination of a section, as used by A. J. King, and G. M. Doolittle, thus:—Top piece and two sides, 2 inches wide; bottom piece, 1¾ inches wide; top and bottom pieces, ¼ inch thick; sides, ⅛ inch thick. These are made ⅛ inches higher than Prize Box, to be used or packed in crate, to be glassed or not, with 5x6 glass, as the trade may determine. Shall hold together while on the hive, and carrying to and from by a strip of manilla paper 1¼ in. wide, put on with glue on each side, so to do as Doolittle does. Put sections in cases; but tin separators would be quite an expense for over 250 hives, consume much time, also, less honey stored; and these three items are quite important with us. Perhaps it pays better to get more honey and less cents per pound. Many speak of loving the bee business, etc. I love the pets, I like the business. Why? Because, there is money in it. Take the money from bee-keeping and it will become scarce.

Eliza, Mercer Co., Ill. D. D. PALMER.

For the American Bee Journal.

Experience of a Beginner.

"I commenced keeping bees about six years ago, in Fremont Co., Iowa, with about the usual experience of beginners. I bought bees in common hives, transfered to movable comb hives. Bought extractor, text and guide books, and subscribed for bee papers, etc. In the winter of 1873-4, out of 35 or 40 colonies, I had but 4 or 5 left; and only 1 or 2 of them in good condition.—The spring of 1877 found me with 30 colonies, Italians and hybrids; one-third of that number in medium condition, and the other two-thirds weak. The spring was cold and wet, so the bees got no honey from fruit blossoms and we had no white clover, so the bees had to be fed until the 1st of July, when sumach and basswood came into bloom. We got no surplus from this sourse, as the weather was hot and dry.—The bloom was of short duration, only yielding honey about 6 days, and from that time till Aug. 10, they made only about enough to live on; from that until Sept. 20, we got our swarms and surplus honey. I got a ton of extracted and 300 lbs. of nice comb, in frames and sections, and increased to 37. Would have had more increase, but worked against it all I could. I am without bees this winter, having sold my bees in October, in Fremont, and moved here.—I expect to go into the business again in spring. I think this is a better location for bees than Fremont. I think with the experience I have had I can make it pay better in the future than I have in the past. Talking with a man, claiming to be a practical, progressive bee-keeper here, a few days since, I remarked, 'Of course, you take the BEE JOURNAL;' his reply was: 'No, I don't go anything on the JOURNALS. I learn by experimenting. Those who write for the BEE JOURNALS don't give the great secret of bee-keeping.' He left me to infer that he knew it about all; at any rate in his own estimation. Now, Mr. Editor, I am interested in this great secret, because it is the secret of success. We are all interested in it. We have been taking and reading the JOURNAL, thinking we were getting this great secret along with the rest; but if we have been deceived, you must make amends immediately, by getting Harbison, Capt. Hetherington, Doolittle or some of

those bee men that have this great secret, to give it to us without delay. There can be no mistake about it, for this man has learned it from experience. L. G. PURVIS.

[Those who do not take the trouble to keep posted, by reading the accounts of the new experiments and ideas, as they daily come to the front—always *know it all.*—This is true in politics, religion, and every department of science. Hence we should expect these "know-alls" to be found, once in a while, among apiarists. But it is consoling that we have, perhaps, fewer than many other departments of science.—Those who really know the most are never wise in their own conceits. Having, by hard work, obtained the knowledge they possess, they view the vast sea of knowledge before them—and realize that they are yet close to the shore, with an unmeasured ocean of knowledge beyond.—ED.]

For the American Bee Journal.

Glucose or Grape Sugar.

In the January number of the AMERICAN BEE JOURNAL, Mr. S. C. Dodge narrates how starch can be converted into glucose or grape sugar. Liquid glucose contains only 33 per cent. of sugar. Solid glucose contains but 40 per cent. Therefore, it takes 3 pounds of liquid glucose to have an equivalent of 1 pound of cane sugar, (*dubeunfant, payen, malepeyre.*

Liquid glucose, at 3¾c. per lb., including cost of transportation, is as dear as honey at 10c. Ten lbs. glucose contains 3.30 lbs. sugar, and the price is 83.75. For the same price, we get 37½ lbs. honey, at 10c., and this honey contains 88 per cent. of sugar, or as much as 3.30 lbs.; just the quantity contained in 10 lbs. of liquid glucose.

Glucose can be produced in three different conditions: Liquid, solid and granulated. The production of granulated glucose is forbidden in france, on account of the facility of mixing it with brown sugar, which it resembles. In Europe they legislate against fraud. Here, our legislators can find no time to attend to *such small matters.*

To detect granulated glucose in brown sugar, dissolve some of it in water, and add 3 or 4 per cent. of caustic potash, and then cool the liquid. If the sugar contains glucose, the liquid will turn brown. Even as little as 5 per cent. of glucose can be detected by this means. Five cents' worth of caustic potash is enough for the experiment. Of course, those who buy brown sugar adulterated with 40 or 60 per cent. of glucose, pay very dear for a poor article.—Glucose is manufactured with sulphuric acid (oil of vitriol). This acid is removed with carbonate of lime, (chalk). But it is impossible to free, entirely, the glucose of the sulphate of lime produced, and a part of it remains in dissolution; sulphate of lime is pure plaster of Paris. Is such a substitute wholesome?

In France, glucose is manufactured with potato starch. This gives the best kind of glucose. It is not as bitter as that made with corn. When glucose was first manufactured in France, the hospitals of Paris resolved to use it to sweeten the beverages of the patients. But as the sickness grew worse by its use, glucose was abandoned.

Bees cannot live on glucose in winter, when cold weather retains them in their hives for weeks. Of course, glucose can be given in summer; but bees seem not to relish it, when it is mixed with honey; and as it contains only 33 per cent. of sugar, to feed it to our bees is a poor investment; for being 67 per cent. glucose, it does not serve as food, and fills their bodies with fæces, and dysentery is produced, if they cannot void these faces. Besides, plaster of Paris has a deleterious action on their organs.

Glucose is sold in immense quantities in the United States; but never retailed by its real name. It is the same with the oil of cotton seed. Who has seen cotton oil in our market? It is caprera or olive oil.

Brown sugar, maple sugar, golden drips, golden sirup, maple sirup, confectionery, preserves, beer, wine, honey; in fact, all the produce in which sugar exists, or is used, are now adulterated with this drug, in the United States.

Is there not, in this country, some law to punish such crimes? If so, why is infringement so audacious, and with such impunity.

In every country of Europe there are officers appointed to examine the articles offered as food, in groceries, bakeries, drug stores, etc. Let bee-keepers obtain from Congress the appointment of similar officers, and see that they attend to the duties.

To sell our honey is now difficult. Why? Because our cities are flooded with honey mixed with glucose, and sold as pure! Of course, this article is no better than glucose sold as sirup, and sells slowly.

But suppose that all grocers, who sell glucose under a false name be prosecuted, what would be the result? Sugar sirup would bring a price in harmony with the quantity of sugar it contains, and our pure honey would sell readily at good prices.

We produce as fine honey as can be obtained in Europe. We can therefore sell our surplus there; but to obtain such a result, it is indispensable that we send a pure article. The honey dealers of Paris pay from 17 to 18 cents for white, strained, *sainfoin* honey; from 13 to 16 for white mixed; 9½ to 12½ for honey from Chili.—Then what kind of honey was sold by an American firm, at Breman, for the small price of 97 cents per gallon, or 8 cents a pound.—(See AMERICAN JOURNAL for December).

It is not by sending adulterated, or inferior articles that we will see the foreign markets opened to our products. European honey dealers will know that honey remains liquid only because it is impure or because it has fermented. The American dealers, who sent adulterated honey to England, made a costly blunder for them and for the Americans at large.

Let us all take steps to prosecute all the venders of adulterated honey, and our efforts will be awarded by good prices and prompt sales. CHAS. DADANT.

Conventions.

Honey Plants.

READ BEFORE THE MICH. CONVENTION.

Honey is not produced by bees; but collected by them from various plants and stored away for their own use in times when they are debarred from collecting, by the absence of the sweet nectar. It is during these times of idleness that the bee-keeper should strive to bring plants into bloom so as to give the bees an opportunity of working.

During White Clover and Basswood we need no extra honey plants, for they follow one another in quick succession; but it is between Basswood, Buckwheat, and the wild flowers that comes the great necessity for cultivated plants.

The past summer I have been watching closely some beds of honey plants, at the Agricultural College, with the following results:

ALSIKE CLOVER (*Trifolium Mybridum*).

Bees began work upon this plant May 30th, the same time that White Clover came into bloom; and continued in bloom for more than three weeks. During this time it was well patronized by the bees. They could be found upon it at nearly all times of the day. The great complaint among farmers is, that it lodges badly, and consequently is not good for hay. A remedy for this would be to mix the Alsike with either the common Red Clover or Timothy. Then the farmer would not only be benefited, but also the bee-keeper. *It is one of the first of honey plants*, and adds to the value of both pasture and meadow.

MIGNONETTE (*Reseda Odorata*).

Mignonette is a native of Egypt—comes to us by way of France and England. It is well known by every one as being one of the most fragrant of plants.

Early in the season our President made the statement that "Mignonette was one of the best of honey plants; that it commenced to bloom early and would last through the season. Bees could be found upon it at all times of the day in large numbers." Of course I expected great things of this plant, for the bee papers were all very high in their praise of its qualities. June 23 it began to blossom, and it was not until the 27th that bees began their work upon it. They did not seem to take to it very readily, for on every occasion that I made observations I found very few bees present. With us it proved a failure. Others have corroborated this statement. But from the bee papers of last year I take the following: "Bees work upon it to the exclusion of other honey plants. One-fourth to one-half of an acre will supply from fifty to seventy-five hives of bees." Again: "One acre will keep one hundred hives busy for a season."

With these statements all coming from good, reliable sources, we must say that the prospects are good for the future of bee men.

It is rather a delicate plant for this climate, and as this year has been a poor one for honey, it would not be safe for me to pass judgment upon it.

ALFALFA (*Medicag Saliva*), or, in other words, LUCERNE, or *Spanish Trefoil*.

It will stand our dry weather with great fortitude. The roots will go down in a dry time from six to eight feet, have a strong, woody stem—would do well for cattle, but for bees in our climate it does not answer. Not a bee has been seen upon our beds of Alfalfa. This plant would also answer well for green manuring; indeed, it would make one of the best of manures.

YELLOW BOKHARA.

In C. F. Lane's catalogue of seeds for 1878, he says: "This plant is a most excellent honey plant." May be all very well for Wisconsin, but for Central Michigan is no honey plant. Only three bees were seen during the whole season at work upon it. Let others give their testimony.

ITALIAN, or SCARLET TREFOIL (*Trifolium Incarnatum*).

Our beds did not come up.

Prof. Beal says: "It is rather tender for our climate, but further south it would grow, and might become a good honey plant."

MELILOTUS ALBA.

Some call it "Sweet Clover," and well they may, for its fragrance can be scented from afar, and from morning till night it is covered with bees. Commences to bloom the 22d of June, and continues in bloom until July 22d.

It is one of the best of honey plants, only it comes at the same time with White Clover and Basswood, and is not needed at that time. It is a biennial, so that it does not blossom until the second year, and then dies. Its bloom cannot be regulated by man.

WHITE DUTCH CLOVER (*Trifolium Repens*).

Commonly known as White Clover. It comes into bloom about May 30th. Some one stated early in the season that they thought it would lap upon Basswood; but I found that it lapped through and nearly around it.

There is no need of dwelling at any length upon this plant, for it is known the wide world over as a *honey plant*.

CLEOME (*Integrifolia*).

Usually termed Rocky Mountain Bee Plant; but as Cleome is shorter, sweeter, and in every respect more easily spoken, so in the future let us use this word, Cleome, instead of that long and ungainly term, "Rocky Mountain Bee Plant."

Our seed failed us. There were, however, a few plants on the embankment south of the bee-house, which did nobly. It is good for low ground—comes into bloom quite early, Other men who have had experience with it, say it is one of the best honey plants.

YELLOW TREFOIL.

No good as a honey plant.

MOTHERWORT.

Began to bloom about the 20th of June. On the 27th of June the bees commenced to work upon our bed. They seemed to take to it more readily in the afternoon. It will last until about August 1st. It is one of our needful plants.

ESPARCETTE, or SAINFOIN (*Onobrigchis Sativa*).

Hardly hardy enough for our climate.

CATNIP (*Nepcta Cataria*).

Commences to bloom about the 20th of July, and lasts until about the 1st of September. The honey is clear and beautiful. As it comes into bloom about the time Basswood goes out, it is of importance to bee-keepers. Bees work upon it readily.

WHITE MUSTARD.

It began to bloom about June 7th, and lasted nearly a month. The bees commenced work on the 11th; on the 19th the bees were so thick that their hum sounded something like Prof. Cook's buzz-saw, lacking the screech. This is one of the best of honey plants, and I think its bloom can be easily regulated by man so as to have it come after Basswood.

BORAGE (*Borrago Officinalis*).

The period of blooming is from June 20th to cold weather. Where there are no plants for bees to work upon, Borage does very well; but when White Clover and Basswood are in bloom, bees will forsake the Borage for them. As cold weather begins to come, they swarm to the Borage. It is a good honey plant, when there are no plants of greater importance in bloom.

FALL BLACK MUSTARD.

Commences to bloom about the 4th day of July, and passes out about the middle of August, so that it is in bloom when most needed. Early in the morning it is loaded with bees, and they will work *en masse* until about eleven o'clock, when their numbers begin to grow less, and at nightfall hardly a bee is to be seen upon it. Its bloom can be easily regulated by man, by sowing either earlier or later in the season, and can safely be classed among the best of honey plants.

RAPE.

Can be made to bloom to suit the pleasure of the one sowing it. It comes up very quickly, comes into bloom soon after it is up, and will last about three weeks. The bees swarmed to the bed of Rape, worked well all the forenoon, and then left for more profitable fields in the afternoon.

From the December number of The Gleanings in Bee Culture for 1876, I have taken Prof. Beal's article on honey plants:

"I am frequently asked to identify or give names to certain plants upon which some person has seen bees at work. This does not usually occupy much of my time, especially if the specimens are well put up, as most of them are known at sight, or after a few minutes' examination.

"But the thought occurs to me, of what benefit can it be to the person sending the plant to know whether it is *Aster Machrophyllus*, *Aster Prenanthoides*, or *Aster Grandiflorus;* whether it is *Solidago Petiolaris*, *Solidago Canadensis*, *Solidago Missouriensis?* My examples are some which are included in the list lately received. Of Asters, we have in the Northern States 41 species, beside 40 to 100 more which resemble them to a person unaccustomed to botany. Of *Solidago*, or Golden Rods, we have 37 species, and some others which resemble them. Scarcely one of these has a separate or common name. Asters look too much alike to be distinguished from each other by any one but an expert. The same is true of Golden Rods and a vast number of other bee plants. They will get the species and even the genera 'all mixed up.' Even the botanist gets some of them mixed occasionally. Our country is renowned for the abundance and variety of the Asters and Golden Rods in September, till the hard frosts appear. These are found in open or unwooded regions, in swamps, along streams, and on the prairies. The fact is, there are nearly a hundred times as great a variety of flowers which furnish bees with food, as most people imagine. On checking off for a noted bee-keeper, who wanted to make a list of bee plants, he seemed to be surprised at the great number, and said he only wanted the best of them. Which are the best? The forty-one asters are all good. In one locality certain species abound in great numbers; in other places, some disappear and others take their places. To be sure, there are some Asters and other plants affording good honey and polien, which rarely exist in large numbers. The same is true of Golden Rod and many other plants. I suppose a plant is desirable if it exists in quantities large enough to afford much food during a long period, or if it affords food a certain time when most other flowers are scarce.

"I have made the action and behavior of insects on flowers a study for years. Some flowers are only visited in the morning or forenoon, as the dandelion; others in the afternoon, others at all times of day when not raining. I tell no news, that Basswood and Raspberries afford good honey, while the Tulip Tree and Lobelia afford honey which is unpleasant or unwholesome to some persons.

"The *Ranunculaceæ*, Crowfoot family, afford us 30 species or more upon which bees work; some of them open early in spring. The *Cruciferæ*, or Mustard family, about 70 species; *Malvaceæ*, or Melon family, over 20 species; *Geremaceæ*, or Geranium family, 13; *Anacardiaceæ*, or Maple, &c., 11; *Leguminoceæ*, or Pulse family, 110 or more native, besides some exotics; *Rosaceæ*, or Rose family, 83, and several exotics; *Saxifragaceæ*, or Saxifrage family, about 30; *Caprifoliaceæ*, Honeysuckles, &c., about 30; *Compositæ*, Sunflowers, Asters, &c., perhaps 325, besides many in cultivation; *Lobeliaceæ*, Lobelia family, 13; *Campanulaceæ*, or Bell Flowers, 7; *Ericaceæ*, Heath family, 60; *Scrophulariaceæ*, Figworts, about 60; *Verbenaceæ*, Verbenas, 10; *Labiateæ*, Mints, many of much value, 78; *Borragineæ*, Borage family, 28; *Asclepiadaceæ*, Milkweed family, 25; *Polygonaceæ*,

Buckwheat family, 38; *Liliaceæ*, Lily family, 50. Besides these, there are many where there is only one or two, or a few in a small order, perhaps not far from 570. Then, probably, there are a hundred or more about which I am uncertain. If I have added correctly, I give, above, about 1,775 species from which bees get more or less honey or pollen. These grow east of the Mississippi river and north of Kentucky, in the United States. Some, like the grasses and pines, have no showy or fragrant flowers, and afford little or no honey. As a general rule, those plants which produce odorous or showy flowers afford honey and will be visited by honey bees, unless the flower is of a shape which makes it impossible for the bees to reach the food.

"It would be a great source of pleasure, and in some cases perhaps a profit also, for every bee-keeper to be a good botanist. In fact, every person should study botany more or less, as any one can if he only tries and perseveres. The culture it gives, the enjoyment, the discipline, all place botany in a high position as a science."

In summing up the cultivated honey plants that I have had under my personal supervision, I find that those of most importance to bee-keepers, where there is no Basswood, are: Alsike Clover, White Clover, Melilotus Alba, Motherwort, Catnip, Dwarf Chinese or White Mustard, Black Mustard, Borage, Rape, and Mignonette. Indeed, they are all good for any region of country.

The question of honey plants is of such vast importance to all bee men, and in my opinion one season is not sufficient for it to be worked up thoroughly and placed before the public, as the seasons differ to such an extent.

FISK BANGS.

Scientific Bee Culture.

ADDRESS BEFORE THE WASHINGTON COUNTY AGRICULTURAL SOCIETY AT SOUTH HARTFORD, N. Y., JAN. 10, 1878.

Inasmuch as some of our most acute searchers into the hidden wonders of the insect world, have, with enthusiasm, devoted their lives to the profitable study of this wonderful insect, I venture to intrude into the usual discussion of stock and crops, to present a few facts in relation to bees and honey.

From the progress of the past few years, it is not too much to expect that the honey interest will yet rank beside the other great farming industries of the day. We are led to this expectation, from an examination into the statistics of honey production, and the sources of supply by which we are surrounded.

From careful observation and from the experience of others, it is safe to say that an average of 500 pounds of honey could be obtained from every square mile of our county; and deducting one-half of this for poor seasons, drouth, etc., and then our 850 square miles would produce over 200,000 pounds, while the provision of artificial pasturage would greatly increase it.

To those unacquainted with our honey resources these statements may seem to be overdrawn, but we have at hand reliable figures from various localities in our own State, where the production is over 1,000 pounds per square mile. While California, noted for its wonderful productions of soil and mine, has localities where there seems to be no end to the flow of this abundant sweet.

While localities are thus being developed, individual effort is progressing in a remarkable degree, and we have reliable reports of single swarms producing as high as 500 pounds, and whole apiaries averaging nearly 100 lbs. to each swarm.

These results are obtained only through unremitting watchfulness and labor, and the adoption of modern improvements.

The first improvement over the old straw hive was substitution of the surplus boxes, from this sprung the well known invention of the Weeks' patent hive of our grandfathers' days.

The next great step in advance was the invention of the movable frame hive by Langstroth. The discovery of this principle opened up a new world of study and observation for the naturalist and apiarist. For, previous to this, many of the habits of the bee, and its domestic arrangement were enshrouded in mystery. A hive constructed upon this principle contains several frames or cards of comb which can be readily removed and examined, thus giving complete control of the occupants.

Soon after the invention of this hive, the good qualities of the Italian bee were discovered, and importation of improved stock was commenced; and at present the active golden Italians are superseding in many localities our common black bee. And now, like our poultry fanciers who have improved their breeds from all parts of the world, our importers are searching all continents and isles of the ocean for new and larger races of bees. And the coming season will witness the importation of bees from Java and Borneo.

The great advantages sought after in new races of bees is a longer proboscis, that will enable the bee to reach honey that hitherto has been unattainable, but which is so abundant that the honey yield would be doubled, and it would become the cheapest and most abundant sweet known.

The next improvement which marks a new era in bee culture was the invention of the honey emptying machine, or extractor. Previous to this discovery, liquid honey was obtained by breaking the combs with all their impurities and squeezing out the honey, which always tasted rank with bee-bread. With the extractor the comb is not broken, but where the honey is thrown from it, the emptied comb is returned to the hive to be refilled by the bees. A single card of comb can be used thus until it is black with age, still the honey thrown from it is as clear and pure as when gathered from the flower. Now when we find that it takes from fifteen to twenty pounds of honey to produce one pound of comb, we have in the extractor a great economizer. Wax is a secretion from the honey after it is eaten by the bee, and resolves itself in thin scales on the abdomen, from whence it is taken by the young bees and used in comb-building. Thus, every pound of empty comb supplied to the bees, is equal to many pounds of honey for the bee-keeper. A third more honey can be obtained with the extractor than of comb honey. And each particular yield can be kept separate. We have in our county, three great sources of honey: White clover in June, basswood in July, and buckwheat and other dark honey in August and September. Our whole yield is crowded into about three months, and owing to drouths and other dispensations of nature, the yield is sometimes cut down to one month, or perhaps but a few days. It is, therefore, possible, with our machine, to keep our beautiful white clover and basswood honey separate, and our buckwheat and other dark honey by itself. California

produces honey of beautiful quality from white sage, and from Florida we have honey from orange blossoms.

After the demonstration of the beautiful theory of emptying the combs by centrifugal force, one would suppose that the apiarist would rest content for a season. But the spirit of improvement which possesses alike the whittling Yankee Josey, and the profound scientist, urged the bee-keeper to still further demonstrations of his skill, and the very latest invention which has been successfully tried during the past season is the manufacture from beeswax of artificial comb or comb foundation; this is given to the bees in beautiful yellow sheets, and is readily worked out by them into comb and filled with honey.

I have thus briefly explained some of the most important improvements in bee culture, and the great problems that are now receiving the attention of the progressive apiarist, is to both increase and cheapen the product, making it an article of necessary use in competition with cane sugar, and an article of export to foreign countries. American honey is proving superior to European honey, and a demand has been already created.

With extracted or liquid honey the bee-keeper has met with many difficulties, one of which is adulteration, but the greatest is the ignorance of the purchaser. The distinctive peculiarity of honey to crystallize or candy has been a detriment to its sale, while that very quality alone of all others should recommend it to the consumer. Nearly all pure liquid honey will candy, and in that condition will keep for years: and the application of a little heat at any time will render it liquid again.

It has been said that our land flows with milk, it should further imitate the promised land described in sacred history, and flow with both milk and honey. We have within the tiny flower a spring of delicious nectar, and wherever its humble lot is cast, either upon our hill-sides, in our forests, or around our very doors, the air we breathe is made fragrant with the evaporation of its wasted sweetness, wasted for the want of our tiny insects to gather it.

JOHN H. MARTIN.

Hartford, N. Y.

Good Queens—How to Get Them?

READ BEFORE THE ADDISON CO., VT., BEE-KEEPERS' ASSOCIATION.

Ever since the Italian bee was introduced and raising queens for the public became an object, a disposition has been manifested by each breeder to make the public believe that his queens were the only good and pure ones to be found in the market. While this may have bee true in some cases, it is my opinion that very many poor queens have been sent out at high prices, and at the same time the queens may have been pure Italians. I will here consider briefly what constitutes a good queen.

FIRST.—A good queen should be a PURE ITALIAN, not of the lightest hue, as I prefer a dark queen or one that has dark progeny, as I consider the dark ones better box workers. She should be large and lively. I speak of their being lively because I find some bees are like some men—rather moderate—they move about as though they were lazy, and so I find them, particularly the workers.

SECOND.—A good queen will comence to lay early and lay abundantly all summer until late in the fall. You may say that any queen will lay early if she has sufficient quantity of bees. Very true, a good queen will produce long-lived and hardy bees and therefore will always have a strong swarm, hence the necessity for breeding such queens.

THIRD.—A queen should produce workers that are good honey gatherers, (and for me good box workers,) and for this purpose I prefer a large and strong bee. I find a great difference in the size of worker bees. Some queens produce small bees. Small bees are not so good box workers and they are more apt to sting. I find that queens reproduce themselves, and would not therefore breed from such queens.

FOURTH.—I like a queen whose progeny are quiet and of a mild disposition, so that when you take out a card of comb from the hive the bees will remain quiet and not run from one side of the comb to the other, and at the same time give you four or five stings before you get through looking them over. I would also have bees prompt to defend themselves against robbers.

FIFTH.—One of the best qualities of a good queen, in my opinion, is a non-swarmer; one that is contented to stay at home and attend to business. Such a queen will produce bees that will store their honey in boxes and leave the brood chamber for the queen to lay in, consequently keeping the combs full of brood and the colonies always strong in workers. Such a queen will most invariably produce good box workers. You have, no doubt, all of you, been puzzled at times to know why certain swarms did not go into the boxes, while at the same time they were as strong and even sometimes stronger than their neighbors which were working readily in boxes. I have had such experience, and have come to the conclusion that it is in the strain we breed from. All strains have their peculiarities, and we should therefore consider all of these POINTS when breeding queens.

I had but three queens last year that I would breed from. I have but one of them left now, but I have a number of young queens that I hope will prove to be what I call good ones. There are many other points on this subject that I might speak of, but for fear of being tedious, I will pass to consider briefly

THE BEST MODE OF RAISING QUEENS.

In this as in other branches of bee-keeping, I do not claim to be an expert. I have never raised queens for the market; I merely raise for my own use. I can, therefore, only give my mode, and to this branch of the business I have given much thought and have come to the conclusion that it is best to breed with great care.

1. I would not breed from a queen until I had summered and wintered her, or in other words, not until she is a year old and even two years are better. At that age I have had a chance to test her good qualities—which should be many. Another reason why I prefer an old queen to breed from is, she has become more mature, and consequently her progeny will be hardier and longer lived, queens as well as workers. I do not see why this rule does not hold good with the bee as well as with animals. I therefore would not breed from a young and untested queen. I believe that all of the above good qualities can be attained by careful breeding.

2. There are many ways of raising queens. Some prefer to raise them in full colonies, others, for economy raise them in nuclei, and claim that they are as good as those raised in full swarms. For my part I see no difference as long as nature is complied with. They are as good and perfect, if raised in nuclei as any other way. In fact, I prefer to raise my queens

in nuclei because I can then watch them and know that they are raised from the egg. In this way I do not have any nine-day queens, but where they are raised in full colonies the bees are liable to start queens from larva that is three or four and even five days old. Such queens are worthless. I am positive of this, for I have tried them to my satisfaction.

I raise my queens by taking a card or two of hatching brood and young bees from a hive that can spare them (no eggs or larva), put them in an empty hive and leave them twenty-four or thirty-six hours, then I take a strip of comb with eggs from breeding hive, cut say one inch wide and three or four long, and fit it in one of the brood combs already in the nucleus hive, leaving an inch space under the eggs for the cells to hang in them after the bees have formed or started queen ce ls, which will be in twenty-four or forty-eight hours. I add to them a card of larva, as they use larva for feeding queen larva (or making royal jelly as it is called). In from eight to ten days the cells will be capped, and in twelve to fifteen days they can be cut out and inserted in any hive desired, or put in the hatching box if you have no use for them for a day or two.

This is one way to raise queens, and I like it as well as any, as it is very simple and easy, and I am sure not to have any nine-day queens. There are many other ways that I might mention but for the want of time. Now, in conclusion, let me repeat, *Breed only from your best queens.*

Bristol, Vt. A. E. MANUM.

Comb Foundation in Surplus Boxes.

READ BEFORE THE N. E. CONVENTION.

Mr. President and Gentlemen:—My prolonged stay in Michigan will prevent my presence at the Convention, I regret my absence, as there will be questions presented of vital importance to the industry.—Prominent among them will be the subject of Artificial Comb Foundations.

I have had no reason to change my views as expressed before the National Association in October, but the importance of one feature of the subject, only alluded to there, has so grown in my mind, as to warrant bringing it before the Convention, viz:—The use of comb foundations in surplus boxes. The importance of the subject extends beyond the present self-interest of any new business to the broad field of a rapidly-growing national industry. That the subject may be discussed in all its relations to the future of comb honey, before its use shall become general, seems to me of great importance; for in such discussion, considerations may be presented that will prevent a hasty verdict, to be regreted in the future, and suggestions offered that may change the views of those who hold such relations to the business, through the press, as to affect greatly for good, or otherwise, depending on the views they advocate.

I concede there may be a little present profit by the use of foundation in surplus boxes, but regard it as trifling, compared to the damage it may work in the future market of comb honey; but even now, there are honest experimenters, who question any profit in such use of it. While I consider the utility of the invention, as regards its use in the breeding apartment a problem already solved, I cannot but be solicitous of the effect in the future, if its present use is urged by all, without other than present considerations.

Our products must come in direct competition with other saccharine food, which now have a well-established place in domestic economy and trade. To supplant these in any measure, we must have an argument.

We are certain of the one, of its beauty and delicious taste; and if to this we can add that of *purity*, I see no reason why we cannot take the field.

There are, at present, few articles of food, of this class, to which the stigma of adulteration is not fixed. Prominent among them are the syrups, sugar-house, silver and golden drips, etc., which now are so much used on the table, and with which our extracted honey must come into most direct competition.

These syrups, at one time, brought a high price; but of late have been so cheapened by adulteration that they are considered by many, even dangerous, owing to the presence of sulphuric acid remaining in the glucose, with which they are adulterated.—Glucose being the product of corn-starch, treated with sulphuric acid.

Such experiments as those made at the Michigan Convention, will educate the people to these facts.

Extracted honey, from its nature, will be liable to such adulteration; and we already see the effect on the market, by this cry thus early raised against it. Therefore, I know of no duty so great, especially to those who undertake to direct the interests of the industry, as that of guarding our products from stigma.

One great problem of the future will be the protection of extracted honey from adulteration; and for this, the united action and wisdom of honey-producers will be required. For it certainly will be "doctored," to a great extent, unless some steps are taken to prevent it; for it certainly opens as fruitful a field for profit in its adulteration as do the syrups. And would it not be well to take some initiative steps soon, to "nip it in the bud," as it were, before it gets of large proportions. All will concede that virtue is the art of protection, and so I make the burden of this paper such action in regard to comb honey, that we shall not put in the hands of our opponents a weapon, in the future to be used against us; and to this point I bring the subject of this communication.

Let any bee-keeper of experience, contemplate for a moment the purity of commercial beeswax, or, what is more to the point, a quantity of refuse comb, before it is adulterated. Containing, in addition to other impurities, dead bees, in various stages of putrification; with moth worms, all sizes, dead and alive, together with their excrement,—and this to be cooked together in a kettle of water, until the savory extract has thoroughly flavored the beautiful yellow wax, destined to become a delicious morsel, and component part of comb honey. And, in case your own stomach is not

effected, I ask, cannot such a picture be used by our opponents against us?

We must keep comb honey free from the impression that it is other than the pure, beautiful food God has made it, working through the wonderful instinct He has planted in these little creatures.

But let the impression once go forth that it is otherwise, that it is "doctored," that it contains anything of questioned purity, that the beautiful comb is not the work of wonderful instinct, but a thing gotten up by machinery in any sense, and you have deprived it of an interest to the consumer, that must effect the sale of it as an ornament and luxury to the table.

The time may come when it will be calculated as an article of food, like beans and potatoes, simply for the amount of nutriment it contains. But that time is not yet.

Commercial men, whose business can be changed at every emergency, dropping this article they buy and sell, and taking up another without serious loss; or manufacturers, with a present self-interest, may advocate its use, but the producer, who has taken up the industry as a life business, cannot, for a trifling consideration, afford to affect its present standing as a strictly pure and beautiful article of food.

Of the few pure things that can be offered to the public, as such, let this one of comb honey remain permanent among them, as the one most delicious in flavor, beautiful in its purity, and of great interest, it being the product of wonderful instinct.

Some one may say that all wax is not made from such stock as described. If not all, I think there are but few bee-keepers but what have seen such as described rendered into wax. Others, that when foundations are used the bees reduce the thickness to that of natural comb.

And again, that they have been used in surplus boxes and the product sold without complaint. To the latter, I would call attention to the small chance of any complaint reaching the ear of the producer, and to the fact that few consumers know of any attempt to suplement nature. But publish the fact that such a thing is introduced, and *that* a substance of questioned purity, I venture it will be found, and what has been called a "fish bone" will be unpleasantly reported. While at times the bees reduce the center quite thin, all who have experimented know that very often, especially if the weather is cool, they leave it as thick as when introduced.

For fear that some may misunderstand me, I will say that I most heartily recommend its use in the breeding apartment, and believe it to take rank with the movable frame and extractor, the three great improvements of the age.

If there is profit in its use for surplus boxes, there is no bee-keeper in the country more favorably situated to reap such present benefit than myself. But appreciating in some, small measure the great future interest at stake, I shall refrain from its use, until careful thought and experiment shall have determined to what extent it may be used without the chance of inflicting an inseperable damage to the industry.

J. E. HETHERINGTON.

Over-Stocking.

READ BEFORE THE N. E. CONVENTION.

Brother Bee-Keepers of the North-Eastern Bee-Keepers' Association:

Though the above subject is somewhat neglected of late, still I feel that it is one that most of us will have occasion to think of before many years pass by. It seems that the mind of man is well calculated to harbor accommodating theories, even unto a settled belief. When we wish one to believe in our heaven, we do not *try* to *prove* its existence, but we present in as glowing style as possible, to his imagination, the joys and beauties of that country—and he *believes from choice.*

Now, writers devoted to the different branches of agriculture, of which bee-keeping is one, take advantage of this same weakness in us, their scholars, and treat us to such errors as these: "This business is the most profitable one known to man;" "Can't over-do it;" "Hundreds of colonies can be kept in nearly every locality without *over-stocking* the field;" "Thousands of pounds of honey yearly go to waste," &c.

It has been the business of the trinity of reason, observation, and experience, called *science*, to root out these accommodating theories, and place in their stead some *hard facts*, some of which are not just as we would like them to be. It has been the crowning glory of the nineteenth century to prove the indestructibility of matter, and the eternal persistence of force. Thus we see that sweetness of any sort or kind has never "gone to waste." Maple trees tapped for many years lose their power to yield sugar. The honey not gathered last season, is to-day somewhere in nature's great reservoir, awaiting the coming bee. (Cyprians, no doubt.)

How many colonies can we most profitably keep in one place? Every one knows that we can care for a number of colonies in *one* apiary with much less expense and labor than in *two* or *three* apiaries. An apiarist whose judgment we all respect, last fall "brimstoned" over one-half of his colonies. Another successful bee-keeper said to me: "The ease of overstocking is little understood by honey producers."

My friend, W. J. Davis, of Youngsville, Pa., whom we very well know to be a bee-keeper of extraordinary skill and opportunity, writes me as follows: "Your ideas of 'over-stocking' *I know are correct*, as applied to this locality. I can secure *more* surplus honey from 50 stocks (spring count), than from 100 in the same locality. I have now 100 in my home apiary, all heavy and in fine trim for winter, and but for considerations of humanity, I could net the most cash within a year to kill one-half of them, using the combs and honey for young swarms next season."

I would kill the queens about twenty-one days earlier, and brush off the remaining bees at the end of the honey season, sell the honey, and lay away the combs for the next year.

I expect to see this method extensively practiced by honey producers. It will pay

us better in the end than to sell off our surplus stock. Such a course will greatly improve our stock, and secure us safety in wintering. I have in my possession several other letters from worthy apiarists, stating about fifty colonies as the most profitable number of stocks to keep in one locality.

Now comes the question, What area constitutes a "locality" for the apiarist? My bees go south four miles and bring in basswood honey rapidly when the yield is good. I find my bees three and a half miles north of the apiary, working on golden rod, of which a book bee-keeper would say, there was enough for 1,000 colonies within the first mile in that direction. Even if we *can* beat the bees making comb, we haven't yet been able to keep them close at home. They seem to *think* they know their "little biz," and something about where honey is still remaining in the blossoms!

My apiaries are six and a half miles apart, and yet are close enough. I have every evidence that I have seen bees from each apiary on the same plant. There are not a dozen colonies near either apiary belonging to other parties. If I wish to gather only one bushel of walnuts, I prefer a ten-bushel pile to scoop them out of, to a scattered bushel under a ravaged tree. Let some "go to waste." It takes longer to find the *last drop* than the *first bucket full*. You will recollect that those large *pro rata* yields come from apiaries of few colonies.

The practicability of running more than one apiary, is a matter of doubt among many of us who are trying it. Could the instinct of swarming be exchanged for an equal amount of energy in the boxes, capital could find a broad field in apiculture, that might pay a satisfactory per centage for a few years to come.

I will pay $100 for an individual right to the use of a practical apparatus that will hive my bees in my absence, such machine not to cost more than a good hive, and I will furnish one for each colony. The above sum I will give to get a part of my bees out of the way of the other part, at the same time securing the increase without an every day's attention.

In my opinion, I have now bees enough to stock at least four locations—in all, 250 colonies. Now, I am confident that our fields and markets here will not afford a hired hand for each apiary during the busy time of year that we need one to hive swarms. Now, if the above ideas are conceded *correct*, can we, any of us, fail to realize the importance of selecting a location for an apiary where few or no bees are kept by others, and in maintaining such a condition of affairs as long as possible.

I fully believe that nearly the entire honey crop of the future will be raised by *specialists*, and we need not crowd each other to the detriment of both parties so doing, as our broad country affords far more good locations for our favorite pursuit, than coming demands for honey will warrant us in occupying.

I hope these scattered ideas may draw out sharp criticism and friendly discussion, which I may hereafter read in THE BEE JOURNAL, and from which receive personal benefit. JAMES HEDDON.

North-Eastern Convention.

The eighth annual convention of the North-Eastern Bee-Keepers' Association was held in Syracuse, N. Y., on Feb. 6, 7 & 8, 1878. Vice President, G. M. Doolittle in the chair. J. H. Nellis, the secretary, called the roll, after which the minutes of the last meeting were read, and Mr. Bacon corrected, by stating that the report concerning comb foundation was intended to apply only to the use of it in boxes. The report as corrected was adopted. Mr. Bacon, the treasurer, read his report, which was accepted and adopted.

Many names were added to the Roll, for the coming year.

L. C. Root, E. D. Clark, and N. N. Betsinger were appointed a committee to have charge of the question drawer.

J. H. Nellis was appointed to examine and report upon the minutes of the National Convention, held in New York last October.

W. E. Clark, L. C. Root, and C. D. Jones were appointed a committee to consider a proposed amendment of By-laws, Art. IV,

DISCUSSIONS.

"*Will it pay to cultivate any crop with the sole view of producing honey?*"

The chairman thought it doubtful whether it would pay to cultivate any crop for that purpose. He lived in a section where nature furnishes the desired blossoms. He did not think it would pay to grow teasels, as these are in blossom at the same time as the basswood, and it is very laborious to grow them.

How, then, can teasel honey be distinguished from basswood? The bees seem to prefer working on teasels; and hence, when we see them at work on teasels and neglecting basswood, we naturally infer that they are making teasel honey. The latter is clearer and more translucent.—Teasels grow anywhere that winter wheat will do well. There is no other flower in basswood time that makes as clear honey. Sumac makes a yellower honey, and blossoms earlier. In the fall of 1872, he fed sugar to his bees; since then, he has not fed them at all, but reduced his swarms when they were not strong enough to winter well.

Mr. Longstreet found alsike clover good for honey. It afterward made excellent feed for horses. He did not know of a crop that it would pay to cultivate exclusively for honey.

Mr. Bacon asked the best means of preventing bees from swarming. He tried hiving the young swarm, and set it by the old one, and afterwards destroyed the queen-cells, and re-united the swarms. So far as tried, this had proved successful.—The main object is to prevent swarming the second time. The first is admissible.

Mr. House, of Fayetteville, had for 8 or 10 years, practiced artificial swarming a few days before the bees would naturally swarm, and seldom failed. Clipping the wings of the queens was unsatisfactory.

C. C. Van Dusen favored artificial swarming. It is important to give ample room, and get the bees to work early.

The chairman, about 8 days after swarming, when 1 queen has hatched, clips all the

other queen cells. In his experience, if he clipped the cells in advance of the hatching of 1, the bees provide for raising an unusual number of queens. If we have a good honey season, there is little trouble about swarming. In poor seasons, nothing will prevent Italians from swarming. Removing all but 1 virgin queen does not entirely prevent swarming.

Mr. House.—When bees get a swarming fever, it is hard to subdue them.

Mr. Nellis has a house apiary, and never had a swarm issue from it. Last summer he had 15 swarms making box honey.—They gave him about 60 lbs. of box honey each. The house is octagonal, and holds 68 swarms. It is lined with building paper, and never becomes extremely hot. He thinks excessive heat makes bees swarm.

Mr. Betsinger's bees swarmed the most in the poorest seasons, 1866 and 1876. A lack of honey causes swarming.

Dr. A. H. Marks found that his bees swarmed most in the honey-producing seasons.

The chairman wanted to know if the bee papers are right in favoring consumers and dealers instead of the bee-keepers, who are their patrons. He then read an extract from the *Bee-Keepers' Magazine*, calling for the sacrifice of the glass on the small boxes.

Mr. Bacon thought it was ungenerous on the part of the papers. The only profit in the small box is the glass. It is a mistake to gather honey in less than 5 or 6 lb. boxes.

The president thought such papers did not deserve the support of bee-keepers.—He read from one that hoped honey would come down to 5 or 6c. per lb., so that every one could afford to use it.

Mr. Nellis thought the demand would decide the form of the package. If it is wanted in glass, it will be put in glass; if in any other form, that form will be adopted. Rich people want it in glass, and care not about its being weighed in. It protects the honey and keeps it clean.

Mr. Snow concurred substantially with Mr. Nellis. He thinks he has created a home market for extracted honey, and he can make the most money out of it.

S. M. Locke thought the buyers of honey know that they get honey in the box by gross weight, and, therefore, there is no fraud, as intimated by the *Bee-Keepers' Magazine*. It costs more to make honey in small boxes. If the consumer wants it so put up, he must pay for it.

On motion, G. M. Doolittle, L. C. Root, S. M. Locke and W. E. Clark were appointed a committee to consider the conduct of certain bee papers, and report what action this Association ought to take in regard to the matter.

EVENING SESSION.

Several new members were received. The Convention then discussed:

"*In what manner shall we use the surplus funds of the Association to best promote its interests?*"

It was moved by Mr. Root to send out blanks about August 1st, to be filled out by members and returned to the secretary, who will in return forward the information thus obtained about the products to each member. It was maintained that this would furnish a basis for regulating prices and aid in successful marketing.

Mr. Bacon showed that, as matters now stood, small producers, who make no business of honey making, too often make the price, by taking to market honey out of season and accepting the first offer. If properly posted, there would be a better chance for having a paying home market. But prices must not be above the reach of the consumer. Consumption must be encouraged, and the middlemen must be content with a fair profit.

The chairman and Mr. Betsinger could get only 16 cts. a pound offered by a wholesale dealer in Syracuse. They sold in New York for 24 cts., and saw two-thirds of their honey go to Philadelphia at 28 cts.

Mr. Betsinger would give $25 a year to get accurate statistics of the honey product. The different organizations might obtain it, if an effort was made.

Mr. Root was in favor of getting such information, and was willing to pay for it.

"*Is grape sugar valuable as food for bees to winter upon?*"

Reports are afloat, said the secretary, that experiments had been successfully made in its use. Is it prepared in the form of a syrup?

Mr. Root had seen an experiment. In this case the grape sugar was put in a dry state in the top of the hive and all honey removed. This was in 1872. The bees lived only thirty days. They lived three months on dry loaf sugar.

The chairman had found the syrup from grape sugar to candy in a few hours or days. Mixing honey with it retarded the candying process. He had never fed it.

"*What will be the effect upon the honey market of adulterating honey, and shall we countenance it?*"

It was agreed that the effect was uncertain. The secretary said some people would not buy candied honey, supposing it adulterated, when candying is a guarantee of purity. If it must be kept from candying, it must be adulterated.

"*What is the best method to promote early Breeding?*"

The chairman knew of no way to get a hive full of bees in March, or even as late as the 25th of May. He can get a new swarm the latter part of June, by furnishing plenty of uncapped comb, full of honey.

Mr. Locke said the largest swarm he ever had was a natural one, on May 10th.

The practice of spreading comb and supplying new has worked well with Mr. Root. He uses a very large frame. But this practice must not be carried too far. After apple-blossoms pass away he had often been compelled to feed heavily. We should see to it that there is always capped honey in the hives. We should not put bees out too early. He would not put them out before the soft maple is in blossom.

The chairman said it is a disadvantage to have the hives full of bees before there is any work for them to do.

Mr. House does not believe there is any advantage in early stimulation.

Mr. Van Dusen believed in having a good supply of honey for food. He frequently uncaps comb in the early part of the season. Heat should also be economized.

Mr. Betsinger would remove honey from the comb, put comb in empty, and thin the honey with water for feeding.

Mr. Root said care must be taken to give bees a supply of water.

Mr. House—In "spreading" great care should be taken by those not well posted.

THURSDAY, FEB. 7.

Vice Pres. Doolittle in the chair.

The Committee on Constitution and By-Laws reported in favor of making the membership continuous instead of having to be renewed from year to year. Adopted; and the alterations in Constitution and By-Laws ordered.

On motion, the Convention recommended all bee-keepers to sign the petition, now circulating, requesting Congress to so amend the postal laws as to permit the sending of queen bees through the mail.

The Committee on Bee-Papers reported the following, which was adopted:

Whereas, The *Bee-Keeper's Magazine* has unjustly charged bee-keepers with fraud in selling honey in glass boxes, and *Gleanings in Bee Culture* is depreciating the value of honey to the detriment of producers, and

Whereas, Most consumers demand that honey be sold in glass boxes, while it is evident that honey cannot be produced at the depreciated value quoted in *Gleanings*, and

Whereas, Said periodicals have taken arbitrary measures to the detriment of those interested, while we recognize the periodicals devoted to apiculture to be the mediums through which both producer and consumer should receive mutual benefit; therefore,

Resolved, That the North-Eastern Bee-Keepers' Association, now in session, do emphatically disapprove of the course pursued by said periodicals.

The secretary read a paper on overstocking, by James Heddon, of Mich.

Mr. Bacon said flowers come and go quickly. We need bees enough to gather the honey when it is ready, or it is wasted. If we have not enough to do this, the locality is not overstocked. He does not think 150 colonies will overstock a favorable locality.

Mr. House: Much depends on conditions. Some localities will sustain 150 swarms, while others would sustain few or none. As an average, 50 swarms are sufficient for one locality.

Mr. Root thinks that in any location, take the season through, 25 swarms will do better than 100. Yet, in some localities, with proper care, 200 or 300 will do well. He thinks there are 500 in his locality. But the larger the number, the more likely the necessity, at some portion of the season, for feeding. He favored locating in unoccupied sections.

Mr. Betsinger: Much depends on care. He has proportionately better results from a larger number of swarms than he formerly had from a smaller number.

Mr. Doolittle thought that the question of overstocking depended very much on the care or the want of care. He could not think 50 swarms would overstock a circuit of eight miles diameter.

Mr. House has had some apiaries, with the same care, yield 25 pounds to the swarm and others 100 pounds of honey. Much depends on pastures as well as on care.

Mr. Bacon wanted to know which swarms had the advantage of pasture.

Mr. House said he thought his home apiary, which made the poorest yield, had the best pasture. He laid their failure to overstocking.

Mr. Nellis thought that when all the circumstances were taken into consideration there would be less appearance of clashing in the experience of different beekeepers. When conditions are right, bees gather honey very rapidly. They do all their work within six weeks, at intervals during the season.

Mr. Betsinger thought overstocking impossible, as he could demonstrate by figures.

Mr. Perry had hunted wild bees, and had never yet captured a bee that had flown much over two miles. It takes a bee thirty minutes to go two miles, load itself and return, when it takes its honey from a box. It cannot, therefore, go four miles and make honey to any profit.

Mr. House's experience was similar to that of Mr. Perry.

Mr. Locke read the following address on

OUR OBJECT AND OUR MISSION.

Mr. President and Gentlemen:

Why have we met here? Are not our State and National Conventions the mouthpieces of bee-keepers, organized for their use and benefit? If so, we have met here to debate and decide upon the most remunerative management for the apiary.

How, then, can we best fulfil this mission? By presenting new ideas, and criticising all those introduced in a candid and gentlemanly manner. In this way can we obtain the information desired, and present the same to the thousands of bee-keepers who are looking to us for it—though unable to be present and take part in our deliberations.

The time has come when it is necessary for the apiarist to be the embodiment of system, and his apiary must have the best supplies and most competent help; and must be carried on systematically.

Profit in apiculture means hard work, and plenty of it. Instead of a few old gums and box hives, and brimstone for the bees in the fall, and *no* management—the present demands the best movable-frame hives, with large capacity for surplus, simple in construction, and admitting of ease and speed in handling. One that will winter well on summer-stands without further packing or protection; with entrance easily contracted or enlarged, and with a brood chamber that can be expanded at will.

Comb honey must be placed upon the market in neat boxes and good crates, and extracted honey in such a way as to drive all adulterations out of existence.

The people must be educated as to the value of honey and its uses, as well as how to keep it from granulating.

Consumers demand glassed honey-boxes filled with the nicest white comb honey. If this Association should adopt a standard box, and all members should put their honey into it, I believe it would further their interests vastly.

The suggestion of our President as to the gathering of statistical matter concerning crops, &c., in August is a good one, and should receive our earnest attention.

The great advance that apiculture has ta-

ken within the past two years ought to cheer and encourage us to renewed exertions for its welfare.

As our honey is gathered in about six weeks, it is essential that bees should be easily and rapidly handled; they should be in good hives and kept strong in numbers, with good queens, and then the best results may be expected.

With comb-foundation, one-third of the labor of comb-building is saved, and with the present prospect of the introduction of new races of bees during the present year—to infuse new blood into our stocks—when we meet again I hope we shall have good reports to make of the season's success.

Salem, Mass. SILAS M. LOCKE.

The nomination and election of officers followed:

President—L. C. Root, of Mohawk, received 42 out of 51 votes, and was elected.

Vice President—George B. Seeley, received 19 and G. M. Doolittle, of Borodino, 29, with a few scattering votes. Mr. Doolittle was declared elected.

Secretary—J. H. Nellis, of Canajoharie, received a unanimous election as secretary.

Treasurer—R. Bacon, of Verona, was unanimously elected.

Honorary Vice Presidents—W. E. Clark, George T. Wheeler, E. F. Wright, and C. C. Van Dusen.

AFTERNOON SESSION.

The retiring president, P. H. Elwood, read the following, as his

ANNUAL ADDRESS:

In an old book we read of a good time coming, when "swords shall be beaten into plowshares and the spears into pruning-hooks." But in neither sacred nor profane lore do we find allusion to the time when the latter shall be converted into that weapon which is said to be "mightier than the sword"—the pen! This, however, is the the modest task you impose on your country in calling for an address.

As we meet again after the successes and reverses of another year, I think it may be well to inquire why so many have come up to our annual gathering, at so great an expenditure of time and money? Are the receipts expected to counterbalance the expenditures? I apprehend this may be the expectation, for, although our business possesses other attractions, and an opportunity for mental work and improvement not found in other out-door occupations; nevertheless, bee-keeping, with the majority, is a matter of dollars and cents. So-called philanthropic motives may urge a few to sustain an association of this kind, but with the great majority "the bread and butter question" is a greater incentive.

What are some of the benefits to be derived from our Conventions? First, the social element is one that cannot easily be over-estimated. The hearty hand-shakings and greetings are expressive of a sympathy not to be recorded on a lettered page. This sympathy encourages us to extra exertions, sustains us in difficulties, and helps establish a class pride that is beneficial. A comparison of the results of the year's labor, prompts us to a good-natured rivalry, and a comparison of the ideas advanced in debate often arouse trains of thought that lead to important results. At our Conventions we meet those who contribute to our literature, and we judge of their ability and reliability, which helps us much, in future reading, in separating the wheat from the chaff. The written part of our Conventions is valuable, as coming from some of our most practical and successful apiarists, some of whom do not contribute to our Journals. The unwritten part is still more valuable. We usually gather together with some problem to solve, some point of practice on which we have not had enough experience to decide. We propound the question to those of more experience, and we come away confirmed or cautioned in our course of procedure. We talk of supply and demand, of over-stocking the market and over-stocking the land, and in a way not always encouraging to dealers in supplies. We sometimes question the propriety of advising every one to go into a business in which so much more has been lost than made, and in which, even at the present time, more goods are produced at a loss than at a profit. In short, we are at perfect liberty to express our views as we please, with "no one to molest or make us afraid."

Ex-president Bacon last year recommended co-operation in marketing honey, and in some form it undoubtedly is destined to produce the most satisfactory results. Many of us are annually compelled to market our products before knowing much about the aggregate production. Without this information we have no way of judging what the price should be. I suggest that measures be taken at this session for collecting statistics of the next crop in time for use in marketing the same. With suitable blanks furnished each member of this Association and to those honorary members who might be appointed and who would consent to collect statistics of the yield in their vicinity, we might be informed in August as to the total production throughout the country. This information would be of very great service to us all, as our markets are annually very much injured by parties who sell below the market price.

Our markets are also much injured by placing goods upon them in an unmarketable shape. This considerably lessens consumption, and I again assert, that it is to our interest to have the best packages used by all. Especially should we affirm, that the Eastern market prefers glassed honey. It presents a finer appearance, and in the retailer's hands the loss from breakage is so much less, that many dealers will handle no other. When you read, please remember that a very strong interest is at work in the East in building up a trade in unglassed California honey. I am sorry to say that one of our bee-publications is aiding in this work by recommending unglassed honey.

Whatever may be your conclusions as to the merits of comb foundation in the brood chamber, I trust you will return no uncertain verdict as to its use in surplus honey receptacles. That commercial beeswax is fit to eat no one familiar with its manufacture will affirm, and it is not expected that passing it between two corrugated rollers will affect its character in this respect, It is also well established, that bees do not sufficiently thin it. Heretofore comb-honey has been one of the things that could not be

adulterated. It cannot now be, except by bee-keepers themselves! Shall that ever be?

Hoping that this session may be entirely harmonious, and that it may be as profitable as it is pleasant, I append an article you asked me for, two years ago, rather than to enlarge on some other topics I had expected to mention. P. H. ELWOOD.

President Root then took the chair. Mr. Doolittle read the following paper on

COMB FOUNDATION:

I am well aware that in presenting the facts, as given below, I shall be censured by those having comb foundation to sell, and perhaps by a few of our practical apiarists; but, as they are facts, just as I found them to be from practical experiments in my own apiary, I give them, being willing to bear the censure of a few, if I may be of any benefit to the many.

My first experiments were conducted in 1875, with foundation purchased of John Long, of New York city. The foundation arrived nearly at the close of the season, and as the weather was cool at the time, the result was quite satisfactory; we have some very nice specimens filled in boxes, with but little sagging. Although the foundation was not properly thinned, I had great hopes for the next year, as I thought with warm weather, the bees would properly thin the base of the cells.

The next season, 1876, I purchased a small lot of A. I. Root, of Ohio, and used it in hot weather; but was completely surprised to find, that while the bees did not thin it out any more than the previous season, it sagged so as to be entirely worthless; some even pulling apart after being filled with honey. But Mr. Root came to the rescue, by telling me that I had been experimenting with paraffine, instead of wax, as the foundation he sent me was made of paraffine, instead of wax.

He then sent me some, declaring it to be made of pure wax, but as the season was far advanced when it was received, I had but little chance to ascertain much about it, except that the bees did not thin the base of the cells a particle. They simply worked out the wax that was raised for the sides of the cells, leaving the base untouched, and although the weather was cool, it sagged some. So far, my experiments had all been confined to the boxes.

As I had some very nice wax of my own, I sent it to Mr. Root during the winter of 1876-7, to be made into foundation, 5 cells to the inch, for breeding purposes. Heretofore, most of the foundation had been made 4½ cells to the inch, which was neither worker or drone size of cells. In due time the foundation arrived, and my former ambition to make it a success returned, as I now had foundation known to be of pure wax, and made 5 cells to the inch.

As early as possible, in the spring, I filled some frames very nicely, taking the precaution given in the BEE JOURNAL to leave it ¾ of an inch from the bottom bar of the frame and ¼ of an inch from the sides. A center frame was taken from a medium colony, and one of foundation put in place of it. After waiting 17 hours, I looked to see how the bees had made it, when, to my dismay, I found the comb torn apart, leaving only a portion of it in the frame; the greater part being in a mass, at the bottom of the hive. Not at all daunted, I put several frames in weak colonies, so as not to get so great a weight of bees on them at first, before the cells were drawn out.—These were not torn apart, but sagged so badly that the combs were all bulged, and rolled under at the bottom. Next, I shortened them up, so as to come within 1½ inches of the bottom of the frame. These sagged so as to just touch the bottom bar of the frame; and, upon measuring the cells, we found them to be 3½ one way, by 5 to the inch the other.

Meantime, Mr. Root was writing us to know the result of our experiments, so we sent him one of these combs. He wrote us back, that although the comb was the worst case of sagging he had ever seen, yet even as it was, it was better than natural comb would average! Didn't my hair stand on end, to think what combs my brother bee-keepers were using, while I had more than a thousand combs in my yard as straight as a board, with 5 cells to the inch, each way! I wrote him for a comb, built from foundation, the best of any he had; upon receiving and measuring it, I found it had sagged, so that the upper half averaged 4½ cells to the inch, by 5 the other way. This comb was in a Langstroth frame and was left ¾ of an inch from the bottom when put in, but had sagged so as to touch the bottom bar. As this was one of his best, I have a right to make a few figures on it.

When the foundation was put in the frame, it was just 5 cells to the inch, as the bees make theirs; having ¾ of an inch from the bottom bar—¾ of an inch, the whole length of the frame, is lost by this sagging process! As the Langstroth frame is about 17 inches long, we have 12¾ inches of loss to every frame, above what the bees would lose if they built it in the frame! As there are 10 frames in the Langstroth hive, we lose on the whole hive 127½ square inches, and as each square inch, if occupied with brood, would give 50 worker bees, we lose 6350 bees every 21 days; or, in other words, it takes just as many bees to brood these combs as it would natural comb, giving 6350 more bees every 21 days, or about 40,000 during the season! In early spring, when brooding bees are few in number, this loss of bees is quite an item.

We have also experimented with foundation in boxes, the past season, and by leaving it ⅛ inch short at the bottom, we had them filled so as to look very well; but when we come to the thinning process, we have yet to see a comb that the bees ever thinned the base of.

When we had visitors, we would purposely put honey on the table, built on foundation, to see them cut it. When the knife came to the base of the cells it was sure to stop, and, as a general thing, the cells on the under-side would mash down before the base would be cut. They generally asked: "What kind of honey do you call this?" It was laughable to see the rolls of wax laid on the sides of the plates!

I have also proved to my satisfaction that

there is but about 2 days' difference in the time of filling a box, in the honey harvest, between a starter of natural comb and a box filled with foundation.

Thus far, I have said nothing about the expense of foundation, as compared with natural comb. As all parties agree that natural comb of worker size is just as good for the brood chamber, and drone size for the boxes, as can be obtained with the use of foundation; therefore, if we can produce natural comb for the same outlay of money, we have something that is just as good, (as admitted by all), as foundation, and I claim far superior to foundation, in its present state of perfection. From experiments conducted the past season, I am confident we can produce more square feet of natural comb than can be purchased by foundation for the same amount of money. I can buy a swarm of bees for from 3 to 4 dollars, transfer them to a frame hive and produce from 25 to 50 square feet of comb from them, according to the season, with no more trouble than is required to fuss with the foundation: besides, this is one of the best schools for a beginner to learn apiculture in!

Thus I have simply given the facts as I found them, and would advise all to experiment for themselves with a pound or two of foundation, and then, if they wish to use it, they can purchase more largely. I expect to have my wax worked up again this year for further experiments, and if I can devise any means to prevent its sagging, I shall consider it an acquisition for the brood apartment, to get all worker comb, *but for nothing else!*

I think no one should be enough of an enemy to himself and honey-producers generally, to use foundation in surplus boxes to the injury of our honey markets. Any one can satisfy himself that bees do not thin the base of the cells, by taking two pieces from the same sheet of foundation, large enough to fill a box. Fit one into a box, and reserve the other. After the box has been filled with honey, shave it down to the base, wash it and compare with the reserved piece; and, if any one can see any difference between the base of the two, it is more than I have ever been able to do!

I have not said that bees in Ohio do not thin the base of foundation, for I have never kept bees in Ohio; neither have I said that honey-buyers, in the city of Cleveland, would not prefer honey built on foundation, for I have never sold honey in Cleveland; but I do say, that if the use of foundation, as heretofore made, is persisted in for surplus boxes, it will ruin our honey markets here in the east.

G. M. DOOLITTLE.

President Root would not countenance the use of artificial foundation in the production of box honey, but thought there is gain in using it in the production of extracted honey.

Mr. Van Dusen had more confidence in its use in the brood chamber than anywhere else. He found the quality of the wax made quite a difference about sagging.

W. E. Clark had unfavorable experience with foundation. His bees tore it down, or else it fell of its own weight. It did better in the brood chamber.

Mr. Perry asked "if the sagging of artificial foundation enlarges the cells, what would be the effect on the characteristics of the bees hatched therefrom?"

No one answered.

Mr. E. D. Clark spoke from experience. He found that the machine made the arch on the wrong side; it gave no support. He finally got some foundation that gave complete satisfaction in the brood-chamber. About one queen in fifty rejects it. He thought as a rule it is not made heavy enough.

Mr. Doolittle had found that bees build their cells at all angles—sometimes with the angle up, and sometimes with the flat side.

Mr. Warner produced a sheet of comb, built from yellow foundation, from which Mr. Nellis cut specimens, which demonstrated that bees do thin artificial foundation. He cut out a piece where the comb was over an inch thick, upon which the bees had not added a particle of their own wax, in other words, the comb was perfected entirely from the wax supplied in the foundation. He prophesied its general adoption. Yellow wax will be made into sheets so thin and perfect that its use will not be detected in comb-honey, and said the action of this Association will be a source of amusement to the reader of the future. If hives are properly shaded, he does not think there will be any trouble about sagging. He has no difficulty in using it.

A paper from Capt. Hetherington, of Cherry Valley, on artificial foundation, was read by Mr. Ellwood.

Mr. Bacon now, as last year, condemned the use of artificial foundation in surplus boxes. Consumers do not want to chew beeswax. In the brood-chamber it is well enough to use artificial foundation.

Mr. Ellwood had no success in using foundation in his surplus boxes. From this fact and his observation, he thinks it one of the biggest humbugs of the age. He does not think it worth what it costs for use in the brood-chamber.

The following resolutions were then adopted:

Resolved, That we, the members of the North-Eastern Bee-Keepers' Association, in Convention assembled, after another year has passed in experimenting with comb foundation, do hereby reiterate our verdict of last year, that we do most emphatically condemn its use in surplus boxes.

Resolved. That the use of comb foundation in the brood-chamber be recommended.

Mr. Curtis, of Utica, gave the Convention the following statistics, showing the production of honey in the State in 1874, according to the last State census: In the State, 1,469,318 pounds, of which the county of Steuben produced 109,319 pounds; Onondaga, 77,336; Ontario, 69,179; Otsego, 56,862; and Cayuga, 47,448 pounds. The total production of honey in the State in 1869, according to the United States census, was 896,286 pounds. Our State production of maple sugar in 1875 was 9,272,702 pounds, and 240,023 gallons of syrup.

Adjourned to 10 A. M., Feb. 8th.

[The last day's proceedings and the statistical table will be given in our next issue. —ED.]

Foreign Notes,

GLEANED BY FRANK BENTON.

A new edition of Dr. Dzierzon's work, "Rational Bee-Culture, or Theory and Practice of the Silesian Bee-Keeper," has appeared.

With the title, *Schlesische Bienenzeitung*, the apiarian society, of Silesia, Prussia, has recently founded a journal to be devoted to bee-culture.

Two foreign journals say that the chimney swallow destroys large numbers of bees. Similar statements may be found in the works of Virgil, Nikol, Jacob and Von Berlepsch.

☞ A. Gadillot, Bordeaux, France, writes: "The French produce very fine honey, but as far as the style is concerned, they are away behind that of the United States. I therefore hope for a fine exhibition from the U. S., at the Paris World's Fair."

"With him who possesses no knowledge of bees, or natural fitness for the work, bee-culture succeeds only as long as the bees thrive of themselves without culture. When this is no longer the case, the usual verdict is:—'I have no more *luck* with bees.'"

G. DATHE.

ERRATA.—On page 40, of the AMERICAN BEE JOURNAL for January, Herr Cori is made to say, "I like the liberty of expressing my views here," instead of "I take the liberty, etc." Instead of $1825, a decimal point between the 1 and the 8 makes the annual salary of S. H. Rykeus $1.852, a sum that would likely no more than supply that worthy native of Holland, and his family with a fair amount of salt for the year.

The apiarian journal, formerly known as *Der Elsæssische Bienen Zuechter* appeared in January, under the title, *Der Elsæssisch Lothringische Bienenzuechter* (*L'Apiculteur Alsacien Lorrain*), with the announcement that the apiarian society of Alsace, and that of Lorraine, had been united, and with a hearty greeting to all the members of the Society of which it is the organ, to its numerous contributors, and to its exchanges. Success to this interesting periodical.

Baron Von Berlepsch.

In a memorial of Baron Von Berlepsch, R. Mayerhœffer, editor of *Bienenvater*, of Bohemia, remarks:

"Berlepsch's apistic and general knowledge was colossal; he was an admirable master of the ancient languages, Latin, Greek, and even Hebrew. What a pity he lacked the knowledge of modern languages! His views were narrowed, for he was deprived of the apiarian knowledge of other cultivated people; he valued too highly that of the Germans; and so, unwittingly, he helped to increase the German bee-keepers' self-esteem, for which, however, he received few thanks."

In closing, Herr Mayerhœffer says: "If we glance over the work of Berlepsch, we must admit that it constitutes a marked epoch—not only for the bee-culture of Germany, but also for the whole bee-keeping world. Berlepsch will ever be held in remembrance, for he has reared for himself a monument that outlasts marble and iron. As long as bees exist and man cultivates them, so long will the name of Berlepsch be heard."

At its coming session, the Agricultural Society, of France, will order a silver medal for the discovery of the most efficacious and easiest method of decreasing the brimstoning of bees.—The most certain way of getting rid of the practice of smothering bees, as well as getting rid of briars, dog-grass, etc., is to scatter information widely.—What would throw the most light upon the subject would be the publication of a succinct treatise on the rational method of managing bees, to be circulated extensively. In the year 1777, *l'Academie imperiale et royale des sciences et belles-letters* of Brussels, wishing to extend apiculture, brought up the question of the best methods in the culture of bees. They gave time and means to the subject. In 1779, there appeared three works, which are still of greater value than some pretentious books, published in our day. These works were put in print, and their circulation was secured by fixing the price low. The Agricultural Society, of France, which contains all the prominent agriculturists, has here a good example to follow.—*L'Apiculteur.*

ARTIFICIAL POLLEN.—The *British Bee Journal*, in referring to the kinds of flour which can be used as substitutes for pollen, gives the preference to that made from peas.

Exhibitors would like to know at what time they should send articles to the Trocadero. It is difficult to say.—The structure, which is to contain the products placed under Class 83, will not be constructed until the close of winter. It is probable that exhibitors will be notified to send articles early in April. A large number of industrial exhibitors have addressed to the Minister of Agriculture and Commerce a petition, which raises an important question, relative to the organization of the jury of awards for the Exposition. The following is the text of this petition: The undersigned, French exhibitors, at the Exposition of 1878, have the honor to request that the French members of the Jury of awards for this Exposition be, (at least, the greater part of them), nominated for election, by the exhibitors themselves, as is the case with those of the fine art department. They hope that you will permit this manner of proceeding, which, guaranteeing independent and competent judges, would put the jury beyond the reach of unjust criticism and accusations." We think that a great majority of the exhibitors in Class 83, will unite in this proper request, upon which it will, no doubt, be adopted.—*L'Apiculteur, Paris.*

The following question was asked at the twenty-first convention of German and Austrian bee-culturists: "What experiments have been made, since the last convention, with colonies of bees located in the open air without hives?"

After Herr Guehler had stated the results of his experiments with colonies of bees, situated without hives in the open air, he drew the following conclusions:

1. The lack of hives has *no* influence on the production and development of brood.
2. The yield of honey is not diminished.
3. There is no greater chance for robbing, as the robbers are quickly driven away.

The speaker dwelt upon the importance of this last point, because it indicates that one ought not to make the entrances very narrow, and that when robbing has already commenced it would be advisable to turn the hive about, in order to rouse the whole colony to action. But what is most important, in a practical way, is this:

4. Bees have no need of water during the winter. When they collect water, or when they search for it, is when they find themselves in an abnormal condition. They are able to preserve a medium and uniform temperature during winter, but the hive should be protected against dampness.

Dr. Dzierzon considered the experiments of Guehler interesting and important for practical bee-culture; not that one would be able, practically, to establish his colonies in the open air, without hives, but because these experiments prove that cold is not injurious to bees. Then, one can give some ventilation constantly.—*Trans. from a Foreign Report.*

L'Apiculteur says, relative to a report published in the *Journal de Saint Petersburg*: "At the meeting of the Economic Society, of St. Petersburg, held Nov. 24, the statements of Prof. Boutelerow, an expert apiculturist, were listened to with great interest. It appears that the bees of Italy, so praised by our apiarists, particularly for the 'mildness of their disposition,' are likely to be dethroned by bees which M. Boutelerow has brought from Caucasus, (to which place he recently made a voyage), and which are more productive and still more gentle in disposition than Italian bees. They wish to make of these bees an article of exportation, hoping for excellent profits from it; but, according to communication made to us, the managers of railroads object to transporting them. The Economic Society should have resolved to enter into conference on this subject with the managers of our railways."

APIS DORSATA.—Mr. Gravenhorst, of Germany, gives his opinion of the Javan Bee, as follows:

"*Apis dorsata* is not at all suitable for culture. Its honey is not particularly agreeable to the taste; then, too, it stores up but little. The combs of this bee are quite different from those of our honey-bee; it does not build them perpendicularly, but horizontally, after the manner of wasps and hornets. From this, it is to be seen that this bee can accumulate no great store.

"For this information I am indebted to Mr. Rykens, a Hollander, who was sent by his government to the island of Java. Instead of cultivating *Apis dorsata*, they propose to introduce the Italian and Cyprian bees there, and, to this end, these bees were sent, on the 2nd of October, 1877, to Java.—Rykens took with him 24 Italians, 2 Krainer, and 2 Cyprian colonies. He sailed by steamship from Helder, in Holland, and, *via* Suez canal, arrived at Java in seven weeks." C. J. F. GRAVENHORST.

Our Letter Box.

Lonoke, Ark., Feb. 11, 1878.

"I see Mr. S. Scott Hammitt asks where bee-pasturage is good and land cheap.—Here in Lonoke Co., anywhere on this beautiful prairie he can find what he asks for." I. D. LEE.

Boundary City, Ind., Feb. 1, 1878.

"I have 9 colonies, (3 Italians and the rest blacks), all but one in American hives, on their summer stands, covered with hay. Over the frames there is a double quilt and chaff cushion. Next season I shall make all two-story hives. The imported queen you sent me is a nice one; I am perfectly satisfied with it." D. W. KNOLL.

Milledgeville, Ill., Feb. 4, 1878.

"I am among the many who are glad that the AMERICAN BEE JOURNAL fell into the hands of those who have no 'hobbies to ride,' or 'axes to grind'—to make money by—well stealing others' inventions and selling without even giving credit to whom it is due. I am only expressing the views of many readers." F. A. SNELL.

Plainfield, Ontario, Jan. 16, 1878.

"I put into the cellar, one year ago last fall, 32 colonies; one I lost, and one was queenless in the spring; I doubled it with another, leaving 30. The increase was 32, sold four, have 58 in cellar in good condition. Last summer was not one of the best of honey seasons; basswood honey lasted but 6 days; the fall crop came in good. I sold my honey at from 12 to 12½ cts. per lb. I use the 'extractor'—no boxes. The principal sources of our honey are from white clover, basswood, buckwheat and golden rod."
ARCH'D PARKS.

Westfield, N. Y., Jan. 16, 1878.

"To winter bees with success, we must give ventilation, and yet, not have a cold current of air through the hive. I carry them in as soon as it shows signs of cold weather; open the box holes, and front entrance, and put the cap on the hive; put the hive where it does not freeze. I winter in a house with a wall one foot thick, and it never freezes. I winter with marked success; hardly ever losing a swarm. Bees did very well here, considering the dry summer." FRANKLIN HARDINGER.

Carlinville, Ill., Jan. 29, 1878.

"I commenced with two box-hives in 1867; got Italian queens for them; and bought 3 more box hives, in 1869. I worked along as I had time. (Have been assistant postmaster for 8 years, and have not had much time to devote to the bees). I raised many fine queens, mostly for my own use, but sold a few to persons in this and adjoining counties. I built a house apiary in 1875; last season, I got about 4000 lbs. of honey, extracted and comb, in 1¼ lb section boxes. We now have 95 or 96 colonies in the house, in good condition. We have a Barnes Saw, run by horse-power, which is the very thing for hive-making. We have used it 2 years. We have 500 section frames filled with combs, ready to go in the hives; also a foundation machine and all the modern implements for the business. I am now out of the post-office, and shall devote all my time to bee-culture. With over 10 years experience, and all my time, I have no fear of the result." J. M. VALENTINE.

Uniontown, Pa., Jan. 24, 1878.

"Having read the AMERICAN BEE JOURNAL from its commencement till now, I will say that I think it was never managed better than at present. Our honey season is only about 6 weeks. Our surplus is almost exclusively white clover honey.—During the short season good colonies will fill their hives, and from 6 to 12 boxes of surplus. Last spring, 2 May swarms filled 6 boxes each, and swarmed in June. I purchased Italians, 12 years ago, of Mr. Quinby. Three years ago, I got some of J. Oatman & Co. They have crossed with the natives, but work vigorously—though they are a little cross. I find much pleasure, as well as profit in the business. Our honey is superior to any I have ever seen, either east or west. I wish success to the BEE JOURNAL." J. T. SMITH.

Plainfield, Ont., Jan. 17, 1878.

"I saw in the July (1877) number of your excellent JOURNAL, an article, 'How to Prevent Increase by Exchanging Stands.'—I have tried the plan there recommended, by changing seven hives in one day, and find it 'works like a charm;' but feel convinced that it is more owing to the place where the hive is placed, than to the particular color of the hive. Bees are scarce in these parts, owing to the way which people will continue to keep them. I was asked, last summer, to examine some large hives, of a neighbor, and found them completely filled with millers and moths. The hives, I should judge, would have held from 100 to 150 lbs. of honey, each, and the loss sustained could not have been less than $16; and yet, Mr. Editor, is it not strange that people will persist in keeping bees to be tormented with moths and millers, and a 'brimstone pit?' Those who should receive the benefit are but idle spectators; apparently careless whether moths, millers or bees gain the supremacy and inhabit the hive. A neighbor of mine has kept a swarm for 3 years, and has not yet received one pound of honey from it. It is true, the bees have swarmed many times, and made large quantities of comb and honey; but as yet, there has been enough for the millers only, which have successfully driven out each swarm from its hive." A. PARKS.

Ashmore, Ills., Feb. 5, 1878.

"I have 52 stands of bees, Italians and blacks, in good condition, on their summer stands. I like the Italians best. I have been keeping bees for fifteen years, and have read many bee papers and books, but place THE AMERICAN BEE JOURNAL ahead, and don't see how I could get along without it. I wish THE JOURNAL could reach every energetic bee-keeper in the land." W. L. BOYER.

Borodino, N. Y., Feb. 19, 1878.

"I intended, at the beginning of the present year, to write an article each month, for all three of the bee papers, and, also, to answer all correspondence, but I am unable to do so, on account of a severe attack of the rheumatism. My correspondence has grown so large as to occupy from 2 to 3 hours every day, and, although it is pleasant to answer all questions pertaining to bee matters, yet my time and health will not permit. Therefore, I shall have to say "good bye" to our much loved Bee papers, and correspondents, for the present."

G. M. DOOLITTLE.

[We are sorry to hear of friend Doolittle's indisposition, and trust it may be of short duration.—ED.]

Naperville, Ill., Feb. 13, 1878.

"I put 108 swarms of bees in the cellar, last fall; they have not been as quiet as in colder winters. I worked 50 swarms with tin separators between the sections, without guides, last summer; and found if I had not guides or starters 2 inches long, they were apt to build from one separator to the other, running the combs just the way we don't want them; and, of course, always attach them to the separators." C. KENDIG.

[Of course, guides are quite essential; a strip of wood, a little wax run along the centre of the top bar, or a *small* piece of foundation will be advantageous in any surplus arrangement.—ED.]

Fond du Lac, Wis., Feb. 9, 1878.

"Last spring, I bought 6 swarms, in box hives; transferred them into movable frame hives, of my own make,—double boxes, with frames 12x13 in. Transferring was done carelessly, and it set them back considerable. I lost 2 swarms, leaving 4 in all. I made, during the season, by using comb foundation, 14 good swarms, which are on the summer stands, surrounded with boxes, and packed with fine shavings. On the 3d inst. bees came flying out thickly, on account of the fine weather. I examined some of the hives and found them in good condition, with plenty of honey. The surplus honey, made during the past season, was about 300 lbs." C. OLM.

Byron, N. Y., Feb. 9, 1878.

"I see, by the February number of the JOURNAL, that to 'accommodate all,' you conclude to call the Section Box, the 'Phelps - Wheeler - Betsinger - Barker and Dicer Sectional Box.' I agree with you that 'for short' it should be called the 'Prize Honey Box.' By refering to my article, (Sundry Items), page 84, in the JOURNAL of Oct., 1873, you will find the following paragraph: 'Last season, I had a hive arranged with section boxes, for trial.' This refers to the season of 1872.—During the fall of 1871, I applied for a patent on a bee hive, (granted Feb. 20, 1872), and sent with model of same, section boxes, arranged on both sides of the brood chamber. This would bring me in ahead of some of the names mentioned above, on the sectional box business. I use these sectional boxes, a case on each side of the brood chamber, holding 1 doz. sections; also, one directly over same, with 15. Size, 5x6. I glass up, after taking off. Our bees (82 colonies) are wintering well on summer stands." J. E. MOORE, *Sup't.*

[We cheerfully add friend Moore's name to the list. It grows astonishingly.—ED.]

Woodville, Miss., Feb. 6, 1878.

"I have succeeded in cleaning up the ground about my hives. Almost all my colonies are heavy with honey. As soon as the bees commence to fly I shall feed them some dark honey I have on hand. On the 2d inst. the spring huckleberry commenced to bloom, and the elm and maple look as if they would bloom in a few days."

ANNA SAUNDERS.

Ft. Atkinson, Wis., Feb. 11, 1878.

"I put 57 colonies into winter quarters, the last of November, and with one exception they are doing well. I put 40 of Dr. S. J. Sawyer's colonies into my house, and there is 28 or 29 of them dead already, and it is doubtfuf about the rest. I think the honey was taken from them so late that they stopped breeding too early, and so died of old age. They were kept on shares last summer by G. W. Merryatt, formerly of Milton, Wis. I winter in a house, made anti-freezing with tan bark walls, sides and top." L. M. ROBERTS.

[Reference was made to G. W. Merryatt, on page 60 of our last issue. It appears that he acted quite dishonorably with Dr. Sawyer's bees.—ED.]

Lamont, Mich., Feb. 7, 1878.

"I have put 20 colonies out for a fly. It has been 60° fahr. for several days. I have lost 7, probably through being too warm and uneasy. The colonies are very strong."

M. W. GOODNO.

Garden Plain, Ill., Feb. 15, 1878.

"In looking over the reports in the back numbers, this winter, I find some winter with only a very few dead bees to the hive. I have wintered in the cellar; for the last 4 years, have wintered in a bee house, but cannot winter with so few dead bees. I have, this winter, swept out at least a bushel of dead bees from 110 swarms; all that was strong, last fall, are in nearly every space between the combs, but it may be they did not count what was on the floor. I have a number of hives with, probably, not half a handful of dead bees in the hive; but they have been carried out and dropped on the floor, and some of the old or diseased bees flew out and died. So far as I can see, at present, my bees are wintering splendidly, except 2 swarms, and from some cause they begin to show signs of dysentery. It has been hard to keep the temperature low enough this winter, and I have had to leave the door open at night a great deal of the time, and, if the weather continues mild, will have to put a part of them out soon; even if I have to carry them in again." R. R. MURPHY.

Charles City, Iowa, Jan. 30, 1878.

"A man, by the name of Harrison, came here this winter, professing to be a scientific apiarist, from Independence, Iowa,—but in reality being a regular dead beat. He professed great things, but when cornered, left for parts unknown, having boarded with a widow here and failed to pay his bill."

LEVI SUTLIFF.

Waupaca Co., Wis., Feb. 19, 1878.

"No snow. Not one day's sleighing, so far this winter. Bees flying every few days. Doing well, I think. I have part on summer stands, protected by a box, with 1 foot of chaff all around and over them.—More are in a small room in the cellar. Do not like to risk too many out of doors, as I believe the cellar the best place for bees in this northern country. This winter is the only one I ever saw so mild. Usually we have from 20 to 60 days continued cold, and most of the time about zero, and often from 20 to 40° below."

J. E. BREED.

Monmouth, Ill., Feb. 18, 1878.

"I pnt 125 colonies in the cellar Dec. 3, and they will remain there some time yet. The temperature has ranged from 42 to 56°. They seem to enjoy it, as though it was a long "summer night," Some have a pint of bees at the entrance. They had 40 to 60 lbs. of honey to the hive."

T. G. MCGAW.

Columbus, Kan., Feb. 18, 1878.

"I have on my place about 300, cultivated, eight years old, soft maple trees; a great many of them are now in full bloom, and are literally swarming with bees in search of pollen. We have two prairie plants in full bloom; very valuable for pollen. Two years ago, my bees gathered it in January, but it was frozen to death in February."

H. SCOVELL.

Madison, Ind., Jan. 12, 1878.

"I called the roll, in my apiary, last week; all answered to the knock. I use the Faulkner hive, with frame 10x16⅛ inches, and surplus room for 216 lbs. of box honey, around and over the brood chamber. This space I pack with straw or chaff, and winter on summer stands. I use White's extractor—the best I ever saw. When extracting is over, I have no straining to do, but draw it off and store away. Many bees are dying in this part of the state; I am not fully satisfied as to the cause; many bees left the hives during the warm weather of last month, and never returned; those left, died among the brood combs and honey."

B. V. MCKINLEY.

Write names and addresses plain—giving County and State.

We have gotten up a "Constitution and By-laws," suitable for local Associations, which we can supply with the name and location of any society printed, at $2 per hundred copies, postpaid. If less than 100 is ordered, they will have a blank left for writing in the name of the association, etc. A sample copy will be sent for a 3c. postage stamp.

American Bee Journal.

TERMS OF SUBSCRIPTION.

Single subscriber, one year,	$2.00
Two subscribers, sent at the same time	3.50
Three " " " " "	5.00
Six " " " " "	9.00

All larger clubs at the same rate.

RATES FOR ADVERTISING.

1	month, per line,	20 cents.
2	" " " each insertion,	15 "
3	" " " " "	12 "
6	" " " " "	10 "

One inch in Length of Column makes Fourteen Lines.

No advertisement received for less than $1.

Cash in advance for all transient advertisements. Bills of regular advertisers payable quarterly. We adhere strictly to our printed rates.

Address all communications and remittances to THOS. G. NEWMAN & SON,
974 West Madison St., CHICAGO, Ill.

DIVISION BOARDS.—Several have written us, stating that Mitchell has a patent on division boards, and asking if they would be safe in using them. In order to get at the *real* facts, we wrote N. C. Mitchell to state his claims. He has sent us a copy of his patent, which decides the matter beyond controversy.

After describing his invention, in full, he sums up by saying, "What I claim as new and desire to secure" by letters patent, is:

1. *The herein-described bee-hive, consisting of the comb-frames C, partitions D, provided with the rubber or woolen strip b, and lugs a, sliding platforms c, and jars E: when the several parts are arranged to operate substantially as herein described, and for the purpose set forth.*

2. *In a bee-hive constructed as herein described, the partition D, provided with the woolen or rubber strip b and lugs a, substantially as and for the purposes set forth.*

In order to patent anything, there must be a *combination of parts*—one piece cannot be patented. Hence Mr. M. claims a board with lugs, (*i. e.*, movable irons, screwed on it, to raise or lower it at the bottom), and a woolen or rubber strip at the sides.

Those wishing to use a plain division board can do so without the least interference from this patent.

☞ We have received a pair of Comb Foundation plates of C. Finn, Des Moines, Iowa. They make, by passing sheets of wax between the plates, comb foundation 8x8, 5 cells to the inch. They cost $10 for the pair. He is also getting up some plates for drone size, 6x6, which he will be able to sell for about $7. For a *small* and *cheap* device, these plates will answer the purpose—but cannot be expected to equal the higher priced machines.

☞ Geo. H. Mobley, Nevada, Mo., gives us the particulars of a "sell" among his neighbors. He had a runaway colony, led by a choice queen to the woods; a neighbor said he had discovered the "bee tree," where his bees were lodged; they struck up a trade like this: He was to give the neighbor a swarm in the spring, for the information. The tree, however, belonged to a third party, and another trade had to be made for the tree; the second party agreed to give the owner of the tree the first swarm from his swarm that friend M. was to give him; and in addition to this, he was to work up the tree into stove wood.—When the tree was "felled," not a bee, or cup of honey could be found. Now, friend M. wants to know, which one was "sold" the worst. We certainly think the poor fellow who had to cut that large tree into stove-wood had a little the *keenest* "sell." He works for nothing, and gets no swarm of bees.

"Bee-keeping of to-day," is the title of a little pamphlet of 62 pages, by W. L. Reed, Macon, Mo. It contains, in brief, just what the beginner needs—information on the various manipulations in the apiary. Of course, it is intended for such, and it will do a good work.

☞ The Excelsior Foundation Machine, mentioned in the February number as the Bourgmeyer Foundation Machine is, manufactured by C. Olm & Co.—Mr. B. being a member of the firm. This machine is being thoroughly tested, and so far has operated well. Should any part, however, not stand the test, the firm stand ready to improve it until it does. They now ship two iron rollers (an extra machine), without extra charge so each purchaser, to be used in bringing all sheets to an even thickness before running them into foundation. It is advertised in another column. It does not make wax sides to the cells—and for comb-honey this is quite an improvement, as it can be made thinner, obviating the "fish-bone" difficulty. We can supply the machine at manufacturers' prices.

☞ Our new "Illustrated Catalogue of Implements for the Apiary" is ready, and will be sent to any address, postage paid. For the accommodation of bee-keepers wishing to purchase supplies, we keep almost everything that can be purchased anywhere, and sell at manufacturers' prices. We have no interest in anything, other than a retailer's profit, and will not recommend any article except on *real* merit. Being located in a great centre of business, it is sometimes very convenient to get goods of different manufacturers all at one shipment. Except in a few instances, we ship either from this office or the manufactory, whichever is the nearest to the purchaser.

Honey Markets.

NEW YORK.—We quote as follows:

HONEY.—In the general and unprecedented shrinkage of all values, honey has shared the fate of all produce—all Capt. Hetherington's, Mr. Doolittles's, Elwood's white honey has gone into consumption at 25c. per lb. We quote white honey, in sundry style of caps and crates, 15 to 17c. Dark grades 8 to 12c. Strained honey, in firkins—light, 10c; dark, 8c.

BEESWAX.—The market for wax is in no better shape, demand being light. Quotations, 27 to 28c. Exports for week ending Feb. 25, 11,520 lbs; do. from Jan. 1, 27,283 lbs; do. same time last year, 8,821 lbs.

H. K. & F. B. THURBER & Co.

CHICAGO.—We quote as follows:

HONEY.—The market is liberally supplied. Good to choice white comb sells fairly at 12 to 14c. per lb.; common to fair at 10 to 11c. per lb.

BEESWAX.—In fair request at 27 to 35c. per lb. for prime choice yellow.

SAN FRANCISCO.—

Feb. 13, 1878.—We have had heavy rains, which insures bee pasturage in the Southern counties, and a large crop of honey. We quote: Comb, crop of 1876, at 14 to 15c; crop of 1877, 18 to 20c. Strained, 9 to 12c. Beeswax, 30 to 31c. STEARNS & SMITH.

CINCINNATI.—Quotations by C. F. Muth. Comb honey, in small boxes, 15@20c. Extracted, 1 lb. jars, in shipping order, per doz., $2.50; per gross, $28.00. 2 lb. jars, per doz., $4.50; per gross, $50.00.

LOUISVILLE.—Quotations by B. B. Barnum.—I will pay for choice, light, extracted honey 8@10c.; for white comb 12½@15c., in small boxes.

GREGORY'S SEED CATALOGUE.—Our readers will find the catalogue of J. J. H. Gregory's well-known seed house advertised in our columns. To handle seed with such conscientious care as to dare to warrant their freshness and purity, is of that class of bold, brave acts which the public appreciate. Though the warranting is of necessity limited to refunding the value of the seed purchased, still, under it, Mr. Gregory must sell good seed or make a dead loss. We have received a pamphlet on the culture of carrots, mangold wurtzel, and sugar beets, just issued by Mr. Gregory, showing how to raise, keep, and feed them.

☞ We keep Prize Boxes and Crates in stock at this office, and can supply orders, without delay, lower than the lumber for a small quantity can be bought for, in the country. See prices on last page of cover.

☞ Many complain of the dearth of small currency, all over the country. In reply to correspondents, we will say that *Postage Stamps*, of any denomination, can be obtained at every country post-office; and we will receive 1, 2 or 3 cent stamps for anything desired from this office.

HOW TO WINTER.—Those who wish to post up on the subject of wintering, will do well to read Prof. Cook's essay as read before the National Convention of last year.—It was published in the December number of 1876, and has since been re-published in pamphlet form, with the other essays.—Price 15 cents.